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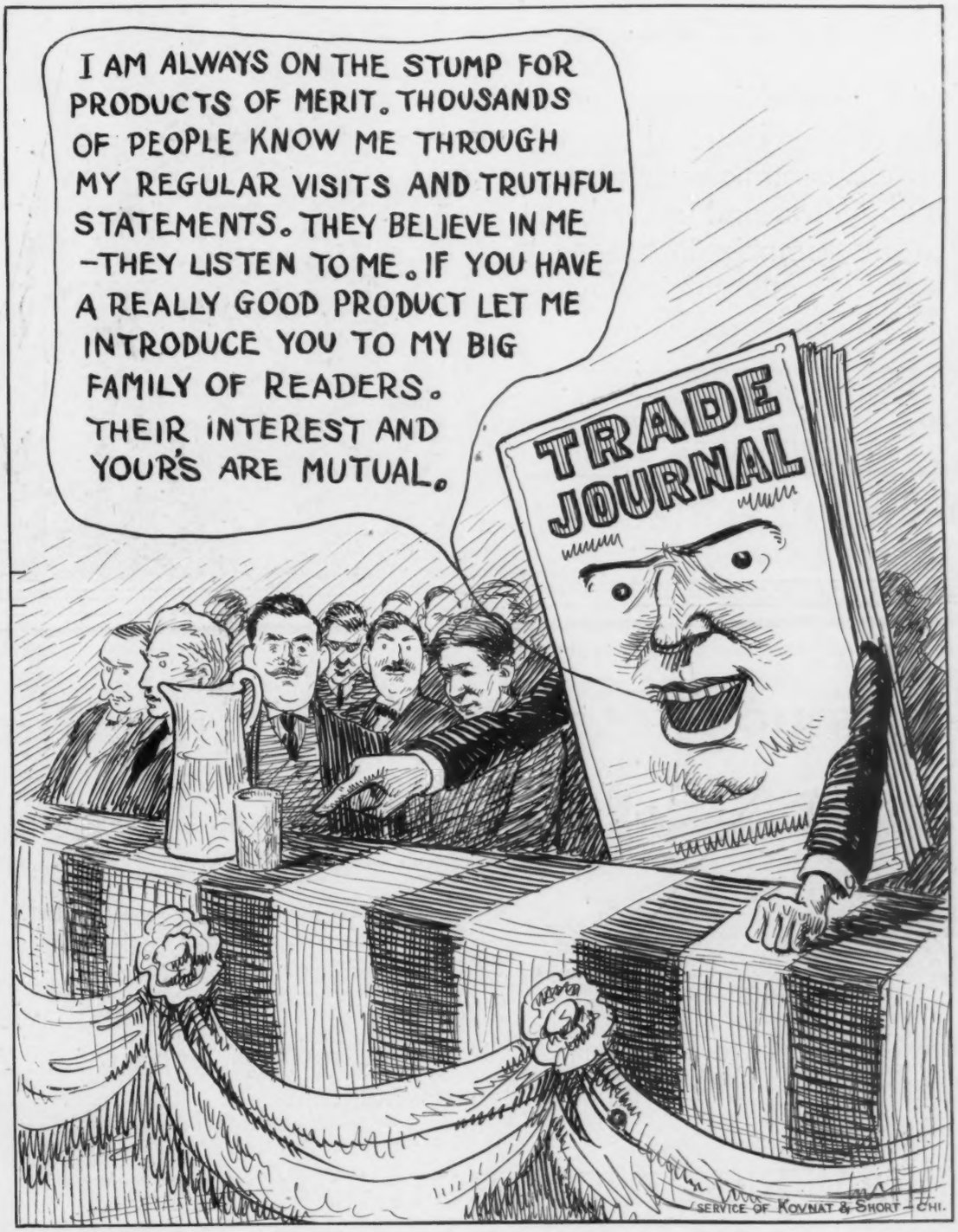
Rock Products

DEVOTED TO

Concrete and Manufactured Building Materials

Volume XII. CHICAGO, ILL., NOVEMBER 22, 1912. Number 5.


I AM ALWAYS ON THE STUMP FOR PRODUCTS OF MERIT. THOUSANDS OF PEOPLE KNOW ME THROUGH MY REGULAR VISITS AND TRUTHFUL STATEMENTS. THEY BELIEVE IN ME —THEY LISTEN TO ME. IF YOU HAVE A REALLY GOOD PRODUCT LET ME INTRODUCE YOU TO MY BIG FAMILY OF READERS. THEIR INTEREST AND YOUR'S ARE MUTUAL.
TRADE JOURNAL
SERVICE OF KOVNAT & SHORT — CHI.

Bay State Brick and Cement Coating

will protect all concrete or cement construction against damage by moisture, will retard fire, give your building any tint desired, may be used as a tint on brick or wood, is equally advantageous on stucco or concrete houses, in mill, bridge or sewer construction. Send at once for booklet No. 16.

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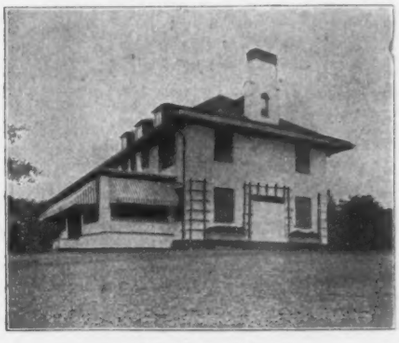


KINGSBURY RESIDENCE
Orange, N. J.
Frederick P. Kelley, New York Architect
One coat of Bay State Brick and Cement Coating used on exterior. Cement Floor Coating used on Porch Floors

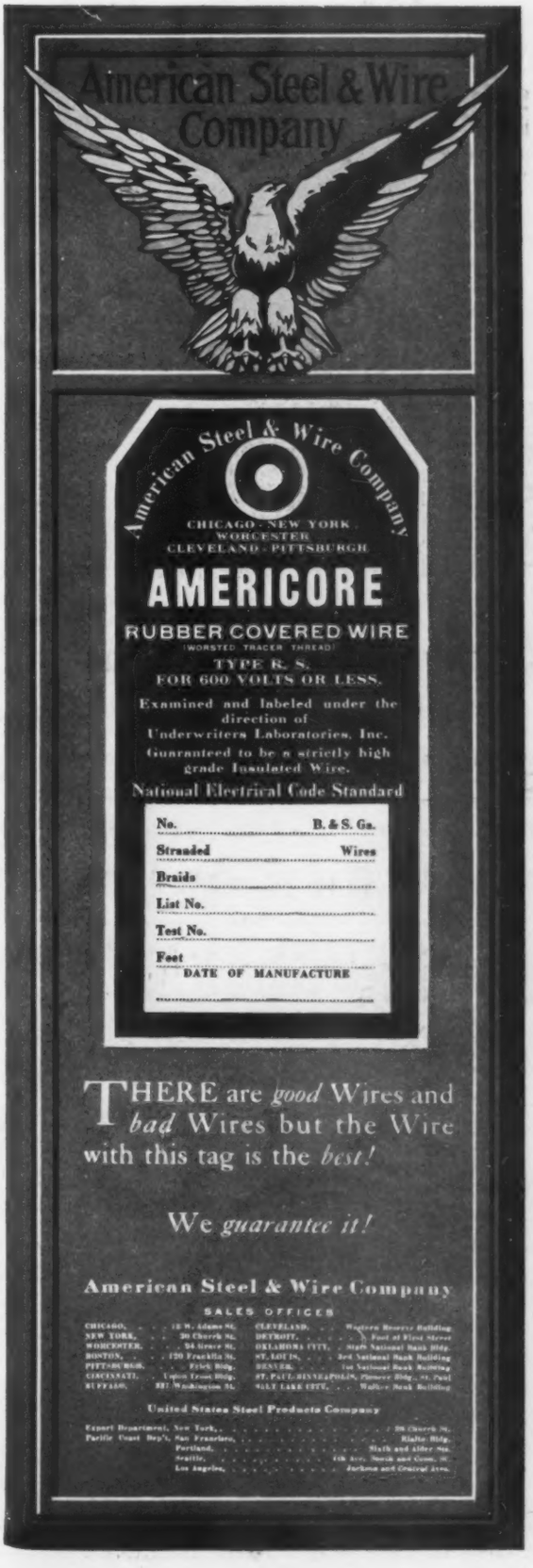
WADSWORTH, HOWLAND & CO., Inc.

Paint and Varnish Makers and Lead Corroders,

82-84 Washington St.,

Boston, Mass.

New York Office, 156 Fifth Avenue



MAXECON

Means MAXimum of ECONomy

Years of experience with the assistance of our hundreds of customers has found THE SOLUTION OF GRINDING HARD MATERIALS. The MAXECON PULVERIZER combines highest EFFICIENCY, greatest DURABILITY and assured RELIABILITY. Uses the LEAST HORSE POWER per capacity. Embodies the features of our Kent Mill with improvements that make it MAXECON.

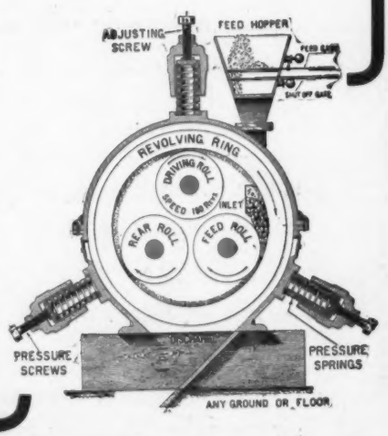
WE DO NOT CLAIM ALL of the CREDIT for this achievement

We have enjoyed the valuable suggestions of the engineers of the Universal Portland Cement Co. (U. S. Steel Corp.), Sandusky P. C. Co., Chicago Portland C. Co., Marquette Cement Mfg. Co., Western P. C. Co., Cowham Engineering Co., Ironton P. C. Co., Alpena P. C. Co., Castalia P. C. Co., Pennsylvania P. C. Co., any many other patrons.

THE RING WOBBLES

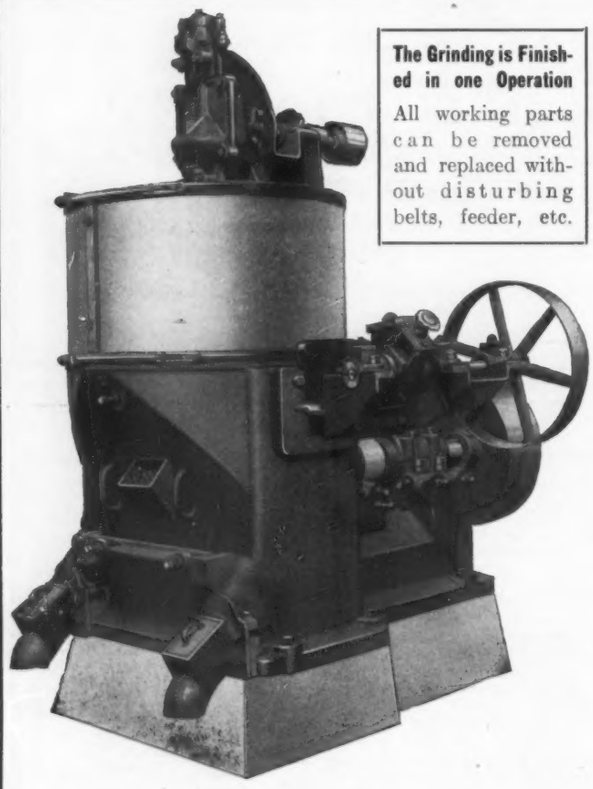
The FREE WOBBLING POUNDING RING instantly and automatically ADAPTS its position to the variations of work.

Its GRINDING ACTION is DIFFERENT than any other; besides the STRAIGHT rolling action of the rolls, the SIDE to SIDE motion of the ring makes the material subject to TWO crushing forces and DOUBLE OUTPUT results.



KENT MILL CO.

10 RAPELYEA ST., BOROUGH OF BROOKLYN, N. Y. CITY
LONDON, W. C., 31 HIGH HOLBORN
CHARLOTTENBURG 5, WINDSCHEID STRASSE 31, BERLIN



The Grinding is Finished in one Operation

All working parts can be removed and replaced without disturbing belts, feeder, etc.

BONNOT PULVERIZER

Grinds and Screens Limestone, Raw Lime and Hydrated Lime

Does it at One Operation. Gives You Any Desired Fineness

GRINDING LIME IS LARGELY A SCREENING PROPOSITION. THE BONNOT PULVERIZER HAS THE LARGEST SCREENING SURFACE AND CONSEQUENTLY THE GREATEST CAPACITY.

NO OTHER MACHINE LIKE IT IN THE ACCESSIBILITY OF SCREEN AND GRINDING PARTS.

No. 4 Catalog Explains These Advantages

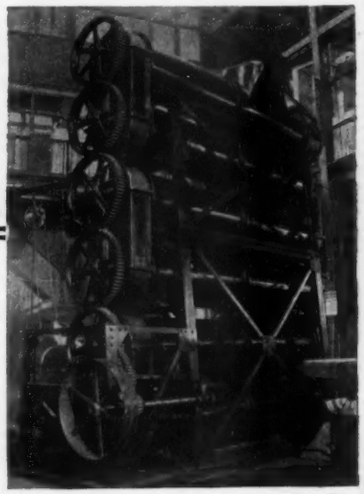
THE BONNOT COMPANY

909 N. Y. Life Bldg.
KANSAS CITY, MO.

CANTON, OHIO

HYDRATED LIME

Its Marvelous Increase In Consumption



KRITZER CONTINUOUS PROCESS

Why Dealers Handle Hydrated Lime, and Why Hydrated Lime Consumption Has Increased 33⅓% Annually During the Past 4 Years

BECAUSE the Dealer finds he assumes no risk of loss in handling it. It does not deteriorate if kept in stock an indefinite length of time. Is a more satisfactory product to the trade and complaints and allowances to contractors cease. Contractors using it once, become constant buyers and users, increasing the dealer's volume of business as well as his profits. A better market is gained and a steadier all around business is enjoyed. Also a wider range of trade reached by the live dealer. This is verified by the marvelously annual increased consumption of hydrated lime throughout the country and the continual enlarging of capacity of Hydrated Lime Plants made imperative for manufacturers to supply the demand. The annual decrease in the use of quick lime and a greater increase in the use of hydrated lime has been seen by the live dealer and, the opportunity quickly grasped by him handling and pushing the product, giving him bigger profits and extending the scope of his business without risk of loss. Hundreds of dealers are yearly falling into line, now regretting not having handled hydrated lime before this.

The Kritzer Way is the **Right Way** for making hydrated lime as every progressive lime man in the country will tell you. 97 per cent of all ideas in hydrating lime are Kritzer ideas.

All of our installations are proving commercially successful.

The Kritzer Company

Chicago, Ill.

September 30, 1912.

Mr. A. M. Bates, President,

Bates Valve Bag Company,

Chicago, Illinois.

Dear Sir:

We have received three hundred and fifty thousand (350,000) of the ties which we ordered about five weeks ago, and we would appreciate it very much to have the remainder of this order come along as soon as possible.

We are pleased with the Bates sackers, and thus far, we have found to our satisfaction, that they will do all you claim for them, and we are satisfied that we have a first-class installation. I want to take this opportunity to express our appreciation of the painstaking way in which Mr. Cosford installed these machines. My only regret, in connection with these machines, is that we did not have them installed long ago.

Very truly yours,

SUPERIOR PORTLAND CEMENT CO.

By _____
Superintendent

WJ..C

ROCK PRODUCTS

ESTABLISHED IN LOUISVILLE, KY., 1902.
DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

Volume XII. **CHICAGO, NOVEMBER 22, 1912.** **Number 5**

Publication day, 22nd of each month.

THE FRANCIS PUBLISHING COMPANY
EDGAR H. DEFEBAUGH, Prest.
Seventh Floor, Ellsworth Bldg., 537 South Dearborn St., Chicago, Ill., U. S. A.
Telephone Harrison 8086, 8087 and 8088.

EDITORS:
EDGAR H. DEFEBAUGH, FRED K. IRVINE.
MANAGING EDITOR.
CHARLES D. WARNER.
BURDIS ANDERSON, Manager.

Communications on subjects of interest to any branch of the industry are solicited and will be paid for if available.
Every reader is invited to make the office of Rock Products his headquarters while in Chicago.
Editorial and advertising copy should reach this office at least five days preceding publication date.

TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions and Mexico.....$1.00
In the Dominion of Canada and all Countries in the Postal Union..... 1.50
Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.
Advertising rates furnished on application.

Entered as second-class matter July 2, 1907, at the Postoffice at Chicago, Illinois, under Act of March 3, 1879.

What are you doing to help educate the contractors in your neighborhood in the use of hydrated lime? Your manufacturer will supply you with all the literature necessary to show the advantages of this product.

All the industries connected with the builders' supply trade have passed through two or three months of great shipping difficulties, due to the car shortage situation. Ample warning was given in time so that many were able to get goods delivered to them in time to avoid some of the trouble. Every fall, when the movement of the western crop begins, there is more or less trouble on account of the shortage of cars. This year it has been greater than ever. It is to the credit of retailers of builders' supplies that they did all they could to help the situation by promptly unloading the cars. We have not heard of a single complaint due to failure to comply with this request that was made of them.

TIME TO GET BUSY—THE ELECTION IS OVER.

One party has full control of the legislative bodies at Washington and the Democratic President will take office on the 4th of March next. This should give this party complete control of all legislation. No financial interest or other commercial enterprise should be disturbed for lack of proper legislation because of the almost unanimous election of this party to control the Government's business, National and State, for the next four years.

With politics all cleared up there should be clear sailing for the future. There is no reason for hesitancy on the part of any one about the conduct of business. It has been demonstrated quite clearly that the wheels of commercial progress need not be clogged by politics, for notwithstanding the spellbinders in political fields, the busy world's wheels kept moving on during the past few months.

The great crop conditions and the excellent financial status of the majority of the commercial interests of this country make possible the most progressive, active business conditions ever prevailing. The scarcity of cars and the lack of laborers to fill in a full crew are the only retarding influences affecting the trade. The demand for all kinds of building and constructive material was never surpassed.

THEREFORE, LET US GET BUSY and forget about any change of political atmosphere and keep the wheels going. Nothing is to be gained by waiting like a Micawber for something to turn up. There is no cause whatever for any croaker to complain. There will be no opportunity for the spellbinder to continue his wailings, and hence the impetus for business should be encouraged by every individual taking care of his particular business and energetically increasing its volume by aggressive efforts every day of the year.

Notwithstanding the immense crops and the necessity for large financing there has been no serious financial difficulty. Banks have been able to take care of the wants of legitimate business, and while the financial conditions abroad have been a bit disturbed by war in the far East and the advanced rates obtained for the best securities, they should not affect us seriously.

It has been demonstrated quite clearly that the financial abilities of our own country are good enough to insure accommodation of all enterprises that are worthy of credit. A railroad president whose company is a large borrower specifically remarked recently that the orders for the development of railroad properties are being readily supplied by the large financial institutions and the reason for this is the fact that the statements of the railroad corporations evidence quite clearly the increased earnings owing to the largest tonnage handled in the history of American commercial life.

You now have the cause and effect. Let us co-act upon the opportunity that is ours! Stand by the gun and do business!

Base your sales on cost plus a profit and no serious trouble will surround you. Forget there ever was an election and keep the plow in the furrow and the crop of good business at profitable prices will follow your cultivation of the ground.

OWNERSHIP OF ROCK PRODUCTS.

The new postal regulations which went into effect on October 1, 1912, require the statement of ownership and management of all publications, and we hereby conform to this requirement by publishing the questions asked and the answers given.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, ETC., of ROCK PRODUCTS, published monthly, at Chicago, Illinois, required by the Act of August 24, 1912.

NOTE.—This statement is to be made in duplicate, both copies to be delivered by the publisher to the Postmaster, who will send one copy to the Third Assistant Postmaster-General (Division of Classification), Washington, D. C., and retain the other in the files of the Post Office.

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Edgar H. Defebaugh and Fred K. Irvine
.....537 South Dearborn Street, Chicago, Ill.
NAME OF MANAGING EDITOR AND POST OFFICE ADDRESS.
Chas. D. Warner.....537 South Dearborn Street, Chicago, Ill.
NAME OF BUSINESS MANAGER AND POST OFFICE ADDRESS.
Burdis Anderson.....537 South Dearborn Street, Chicago, Ill.
NAME OF PUBLISHER AND OWNER AND POST OFFICE ADDRESS.
Edgar H. Defebaugh.....537 South Dearborn Street, Chicago, Ill.

Known bondholders, mortgagees, and other security holders, holding one per cent or more of total amount of bonds, mortgages, or other securities.....None

E. H. DEFEBAUGH,
Editor, Publisher and Owner.

Sworn to and subscribed to before me this Thirtieth Day of September, 1912.
[Seal] J. S. PENNINGTON.
My commission expires October 24, 1912.

EDITORIAL CHAT

COMING ASSOCIATION MEETINGS.

American Good Roads Congress, Cincinnati, Ohio. Ninth Annual. December 3, 4, 5 and 6.

American Association of Manufacturers of Sand-Lime Brick Products, King Edward Hotel, Toronto, Canada. December 3 and 4.

American Institute of Architects, Washington, D. C. December 10, 11 and 12.

First Annual Pittsburgh Cement Show, Pittsburgh, Pa., December 12-18.

National Association of Cement Users, Pittsburgh, Pa., December 10-14.

National Association of Sand and Gravel Producers, Auditorium Hotel, Chicago, Ill., January 16 and 17.

National Builders' Supply Association, New Orleans, La., just prior to the Mardi Gras Carnival. Date announced later.

Nebraska Cement Users, Auditorium, Omaha, Neb., February 4, 5, 6 and 7.

National Lime Manufacturers' Association, Hotel Astor, New York, N. Y. January 22 and 23.

Sixth Annual Chicago Cement Show, Coliseum, Chicago, Ill., January 16-23.

CONDITION OF THE TREASURY.

At the present writing the condition of the federal treasury shows a working balance of $86,131,779; in banks and Philippine treasury, $32,625,880; total of general fund, $145,361,926; receipts yesterday, $2,381,189; disbursements, $1,765,095. The deficit this fiscal year is $6,954,538, as against a deficit of $21,202,842 last year. The figures for receipts, disbursements and deficit exclude Panama Canal and public debt transactions.

EPITAPHS IN THE CEMETERY OF FAILURE.

He lacked tact.
Worry killed him.
He had no reserve.
He lacked stamina.
He couldn't decide.
He was too sensitive.
He couldn't say "No."
He was almost a success.
He clung to his prejudices.
A little success paralyzed him.
He didn't read ROCK PRODUCTS.
He was strangled by selfishness.
He was too proud to take advice.
He did not guard his weak point.
He did not fall in love with his work.

EXPORT TRAFFIC RULING.

The Interstate Commerce Commission has announced an important ruling on bills of lading, putting into effect instructions that the rules and regulations of carriers governing bills of lading on export traffic must be published in tariffs and filed with the commission. The commission also rules that interest may and should be paid by carriers on all overcharge claims from the time when the amount of money to be refunded has been improperly collected.

Wilbur McNeil, of the large builders' supply firm of H. C. McNeil & Son, of Sioux City, Iowa, was in the city last week making arrangements with the Lehigh Portland Cement Company to supply them with cement for the coming year. Mr. McNeil said that conditions in Sioux City and territory were the best they have been in many a year. There is much reinforced concrete construction being done there and the prospects are exceedingly bright for the year 1913.

Mr. Walter B. Snow, Publicity Engineer, 170 Summer Street, Boston, has recently increased his staff by the addition of Mr. Fred R. Lufkin, formerly of the instructing staff in electrical engineering of the Massachusetts Institute of Technlogy, and late assistant superintendent of lighting and wires of Brookline, Mass.

W. W. Rhodes, chemical engineer, is now connected with the Woodville Lime & Cement Company, Woodville, Ohio, and in addition to his duties as chemist has taken charge of the manufacture of Alca-lime plaster, which is one of the principal products of the Woodville concern. Mr. Rhodes was formerly chemist of the Berkeley plant, Security Cement & Lime Company and of the Blair Limestone Company.

CHANGE IN THE LEHIGH.

A change has been made recently in the staff of the Lehigh Portland Cement Company, which not only is of importance to the trade, but a most pleasing bit of news to the many friends of those involved. To begin with, the redoubtable Fred Paulsen, who has been running the office of sales manager in his shirt sleeves, has had a brand new niche made for him with a sign over the top "General Traffic Manager," but he will not pose much in the niche as he will be out on the firing line seeing to it as usual that the retailers get their shipments on time.

To say anything about Fred Paulsen and his standing in the cement trade is like painting the lily. It goes without saying that he well deserves the promotion he has received, and not only is he to be congratulated, but those above him who made the selection are to be commended for their wisdom. If this were a paid write-up we would have more to say, but as it is not we can only wish him good luck.

The chair formerly filled by Fred is now occupied by H. M. Scott, who is the new general western sales manager. We first knew Mr. Scott when he was chasing around the southern states getting orders for Lehigh, and he did it so well that they brought him into the office to give somebody else a chance to sell cement. They were unable to keep him down there, as he has steadily risen until he now is at the head of this end of the sales department. He is one of the coming men of the industry—in fact, he is already here. Mr. Scott was formerly assistant western sales manager. The general movement up the line has advanced also S. B. Chittenden, who was formerly advertising manager. He now takes the place formerly filled by Mr. Scott as assistant sales manager. Mr. Chittenden has been in Chicago only a couple of years, coming here from the Sherwin-Williams Company. He has endeared himself to everybody in the business and has displayed an enthusiasm in his department that has radiated throughout the land. He will still have a general supervision over the publicity department, which will be in immediate charge of J. B. Mackenzie, a very bright young man who was picked for the place on account of his many good qualifications.

Bert Swett says that he is glad of Chittenden's promotion because he will now escape some of the sharp jabs that have been directed his way in the Lehigh's monthly publication.

COMING MEETING OF AMERICAN INSTITUTE OF ARCHITECTS.

Philadelphia delegates to the annual meeting of the American Institute of Architects, to be held in Washington, D. C., on December 10, 11 and 12, will urge the establishment of a Bureau of Fine Arts that will in effect take the place of the Tarsney act recently appealed. The repeal of the law that for twenty years existed for the benefit of the country was fought by a committee of architects from the American Institute, of which John Hall Rankin, of this city, was chairman. According to Mr. Rankin, his committee was not able to clearly get at the foundation of the opposition to the act. But two objections were made clear by those opposing it. One was the allegation that the Tarsney act, which permitted public competition in the plans for government buildings, cost more than if the work was done by government architects. The other reason given against the law was that "the secretary of the treasury was given too much freedom." Since the repeal of the law there is no department or branch of the government to supervise constructive work. Each department does its own work, and to all new buildings authorized by Congress it will be necessary to attach how the work shall be planned and done.

A. H. Gallagher, of the National Retarder Company, Port Clinton, Ohio, visited the East and West the first part of this month and reported a good volume of business for retarder in the plaster business.

The secretaries of the building exchanges of all the principal cities of the country recently met at Detroit, Mich., for the purpose of perfecting an organization. Nashville, Tenn., is making an effort to get the convention next year

FRED E. PAULSEN

H. M. SCOTT

S. B. CHITTENDEN

SNAP SHOTS

Conducted by FRANK ADAMS MITCHELL

THANKSGIVING.

I.

OVER the world is Autumn's mantle spread,
A counterpane on Summer's emerald bed;
And snow-clad Winter stands outside the door,
To seek admittance ere the year be o'er.

II.

The heavy laden corn is gathered in,
The Summer's fruit safe stored within the bin;
And mows, sweet scented with their load of hay,
Where children romp through many a winter's day.

III.

The weary son of toil halts then apace,
And leaves the bench, the plow, the market place;
And seeks again the spot he loves the best,
To spend a day of thankfulness and rest.

IV.

Yon turkey cock, which but the other morn
So proudly strutted through the ripened corn,
Has fallen low, and now he lies in state,
An offering to the day we celebrate.

V.

The family, reunited on this day,
Feast, laugh and sing, and each in his own way
Gives thanks for all the blessings of the year,
And drinks a health to Autumn and Good Cheer.

The London Daily Mirror has telegraphed prominent Englishmen asking how they would spend their last shilling. It might be worth while to cable some of our own countrymen. Many of them have been in that predicament so often that the answers doubtless would be instructive. For our part, we wouldn't spend it, but would get busy, and it's surprising how busy a man can get when necessity prods from behind.

Nevertheless, how would you spend your last shilling?

* * *

And that reminds us of a shilling story.

Some years ago, a review of one of Rudyard Kipling's stories mentioned that the price paid Mr. Kipling averaged a shilling a word. A few days later he received this letter:

"I understand publishers pay you a shilling a word. For the enclosed shilling kindly send me one word."

Mr. Kipling sent the word as follows:

"Thanks."

* * *

United States Judge Emory Speer, of the southern district of Georgia, recently had before his court a typical Georgia charge of illicit distilling.

"What's your name?" demanded the eminent judge.

"Joshua, jedge," drawled the prisoner.

"Joshua, who made the sun stand still?" smiled the judge, in amusement at the laconic answer.

"No, sir. Joshua who made the moon shine," answered the quick-witted mountaineer.

And it is needless to say that Judge Speer made the sentence as light as he possibly could.—Tit-Bits.

* * *

Heard in the Smoker.

"I've always said I wanted to die with my boots on," said the chronic joker, "but here's a fellow who has gone me one better. This newspaper has a heading, 'Trapper found dead in Arctics.' Get it? Died in his arctics."

* * *

A Good "Come-Back."

Sir George Reid, of Australia, who has been in this country for the past few weeks, told this story at a dinner in Chicago the other day.

He was making a speech in Melbourne a few months ago, at which a number of suffragettes were present. In the front row sat a stern, aggressive looking woman, who seemed disturbed by a number of statements made, for Sir George was particularly plain-spoken that night. Finally, unable to hold in, she shook her fist at the speaker, and shouted: "Oh, if you were my husband I'd poison you." Sir George is a pretty quick thinker, and after waiting for the laughter this caused to subside, he leaned over and calmly said: "My dear madam, if I were your husband, I'd take poison myself."

* * *

Up to Date.

"My dear," said Adam, as he and Eve were discussing the fall fashions, "which system of dressmaking do you favor?"

"Well," replied Eve, thoughtfully, "they all have their merits, but the loose leaf system is good enough for me."—Judge.

Speedy Justice.

Some years ago, a justice of the peace, who, although not versed in legal practice, prided himself on his knowledge of parliamentary law, gleaned from years of experience as official in numerous fraternal societies. It did not take the lawyers who appeared before him long to discover this and now and then they had a little fun at his expense.

One morning a negro was brought in for stealing chickens. After the case was called, the lawyer for the defense arose and said, "Your honor, I move the prisoner be discharged." The opposing counsel loudly objected, but the justice was equal to the occasion. "Objection overruled," he shouted, "you're out of order. Is there a second to the motion?" "I second it your honor," said the accused, and his counsel called "Question!"

Without further delay the justice put the question, which was passed with just one dissenting vote.

* * *

The Sad Iron.

Oh, ye who lightly look on life,
Gaze on my somber, sullen face,
Begrimmed and blackened by the strife,
A martyr to the human race,
My many wrongs go unredressed,
By foe and friend alike hard pressed.

The editor said this was too flat—but as it is a flat-iron speaking—oh, very well.

* * *

Progress.

The wave of progress carries on its crest,
Not selfishness, nor greed, nor love of gain,
But strength and sturdy purpose, all that's best,
Of man's God-given will and mighty brain.

CEMENT USED ON PANAMA CANAL.

When the latest million barrels of cement purchased have been used in construction work on the Panama Canal, the amount of cement employed in the building of the big ditch will have reached a total of 2,300,000,000 pounds. The cost of this item of construction reaches $6,500,000. If the barrels which contained the cement could be placed end to end they would extent 2,300 miles.

EXTRA SESSION.

Washington, D. C., Nov. 18.—The general consensus of opinion in Washington—in which we fully concur—is that an extra session of Congress to revise the tariff is inevitable. This opinion is strengthened as one party leader after another gives it as his view that Gov. Wilson should summon Congress together soon after he takes his seat. This was to be expected. The Democrats have long agitated tariff revision and made their campaign of 1912 and 1910 principally against the Payne-Aldrich bill. Their platform denounced it and pledged the party to revision, downward, and quickly. Not to have an extra session would postpone such revision into 1914, a practical repudiation of their denouncements and their platform pledge, and bring on whatever trouble may follow revision on the eve of the next campaign—possibly while the campaign is in progress. In his efforts to sound out his party, however, Mr. Wilson is displaying much wisdom and political shrewdness. Wisdom, because he gets away from the "Big Stick" idea; shrewdness, because he places himself in the attitude of acting according to the sentiment of the party leaders and forestalls possible future criticism by making the party rather than himself responsible. Doubtless he has in mind the fate of Cleveland and Taft with their extra sessions which ultimately led to their defeat. While we therefore consider the opinions of the leaders as interesting they are in the nature of cumulative evidence of what we consider a foregone conclusion.

It is too early to predict in detail what will be done with the tariff, but certain general conclusions seem clear to us. One is that the Democrats are not likely to make the sweeping reductions some people advocate and expect. Bills presented primarily for political effect, with the knowledge in advance that they cannot become laws, are usually very different propositions from measures intended to become laws. It must not be overlooked, however, that those interested must look to the bills as passed by the House last session and during the extra session, as the base for coming action and not the present law. In other words, those seeking protection must be prepared to fight for an advance in the rates proposed rather than to resist a reduction of those now in effect.

One of the factors which will operate to restrain radical legislation on the tariff is the fact that the Senate will be Democratic by only a narrow margin and the conservative thought will be powerfully felt in that chamber. While the Progressives and radical Democrats might combine this is unlikely, and could be defeated by a similar combination of the conservative Democrats and Republicans. We therefore anticipate a toning down in the Senate of any radical tariff legislation from the House, though perhaps not so much as in the case of the Gorman-Wilson bill. In the House the 160 Democratic majority will be unwieldy and may prove intractable, and there is no telling how far it will go on tariff or any other legislation. There is likely to be a powerful check, however, to hasty action in the House in the person of Oscar Underwood, chairman of the Ways and Means Committee. Mr. Underwood is a conservative by birth, training and surroundings. He is a young man and can afford to wait four or eight years for the presidential nomination, on which his attention has been fixed. It is reasonable to presume that the Democratic party will take no action on the tariff likely to seriously injure either the country or the party's future prospects if Underwood can prevent it, and he is one of the most, if not the most, influential individual in the House.

The Coming Session.

We do not expect any time to be wasted on tariff legislation during the coming session and very little general legislation of importance because of the impending change in administration. There are thirteen great supply bills that must be passed and the Senate will have the Archbold impeachment on hand. An effort will be made to get the bill creating a new Department of Labor through, and as Mr. Wilson favors it this may be passed by the Senate as a matter of courtesy. Dec. 17 is set aside for the bill to prohibit interstate commerce in intoxicating liquors in certain cases. It is unlikely that any attempt will be made to amend the Sherman anti-trust law but there is a possibility that the House will pass the Cummins resolution directing the attorney-general to appeal the Toobacco Trust case decided long ago. It is possible there may be some conservation legislation. It is generally understood that there will be no appropriation made for the Commerce Court beyond March 4, when the present appropriation expires.

ILLINOIS MECHANICS LIEN LAW

Address Delivered by Julius A. Coleman, Chicago, Before the Chicago Association of Credit Men, City Club, Monday, October 21.

Gentlemen of the Chicago Association of Credit Men: No association, not even church, could have a better motto, do a serviceable work, whose wider spread would be the better for all America, yes, for all mankind, than yours, for you are "builders of conscience and commerce."

I take your motto as my text, for the mechanics' lien law is a builder of conscience and commerce. Its claims appeal to conscience, for they must be made under oath as to their justice, and commerce knows no better builder than security of payment for what is sold.

I hope to yet see in this law a clause, that when a claimant cannot sustain his claim, either in law or equity, the court shall give judgment as in tort in the owner's favor for the full amount of the false claim asserted, as damages for clouding that owner's title. For nothing can do more to make a beneficient law a baneful one than its abuse, or should be punished with severer rigor.

To quiet an unseemly wrangle, a Presbyterian Synod asked the celebrated blind preacher, Thane Miller, to pray. He rose and said, "O God, give us more common sense, Amen." No mortal ever made a wiser prayer. Now let the pious here pray for, while I try to practice common sense in an explanation of mechanics' lien laws, free from legal verbiage and of plain simplicity.

From time immemorial it has been the law of every land, that when a mechanic, on order, made or repaired a wagon or other implement, he could hold it until paid for, and if not paid for, on proper notice, sell it and out of the proceeds of the sale satisfy himself for what was due him for his work.

The mechanic cannot retain physical possession of a building but this law's grip simply gives him the equivalent of that physical possession, of time honored and universal approval, the same right to and result of sale.

In many states where property that is unpaid for can be identified and is in the buyer's possession, it is made subject to execution upon a judgment for what was owing for it, regardless of exemption laws. No one can complain of injustice in either restoring to him who parts with possession of property on promise of payment therefor, that very property, if unpaid for, or subjecting it to sale under a judgment for the debt.

Illinois should have such a law.

The labor put in a building cannot be taken out of it. The different classes of material incorporated into it cannot be torn apart and each part restored to him who has not been paid for it, nor can that particular part be sold under execution in his favor, but you can make a sale of the entire property, and a partition of the proceeds among the respective creditors, as entitled to them.

This is precisely what enforcing mechanics' lien does.

It is often asked why this lien is given to the material man for what he sells, when the ordinary merchant is not given a lien for what he sells.

I stand upon the broad ground, that to hold unpaid for property, whether by lien in favor of general merchant or material man, as security for what is unpaid for it, so long as the rights of innocent third parties are protected, needs no argument in its favor with any honest man.

Let me repeat this proposition, for I defy any man to show that a fair mechanic lien law goes one inch beyond it.

These reasons are given for the exception.

1. The use of ordinary merchandise wrecks its market value, makes it worthless as security, liens thereon of but little, if any good. Its transient and transitory nature; absence of fixed, permanent location and certainty of identification, whereby the rights of innocent third parties may be protected, disable from the making of such security.

The used building does not destroy but for a considerable time adds to and keeps up the market value of the land it is built upon and the security for what is owing on it. The building is always of fixed location, easy of identification, and liens thereon made of public record certain to protect third parties buying or loaning upon it.

2. Again, the man who puts $5,000 worth of house on a $2,000 lot, not only puts it where it is of easy, certain identification, but adds to that lot more in market value than the cost of the house. As an almost invariable rule, he turns the $2,000 lot into a property that is worth and will sell for from $8,000 to $10,000. Not only this, but if it be a vacant block, the improvement will add from 10% to 20% per front foot to every lot in the same block, if not to the lots on the opposite side of the street. In fact, every new building increases the value of, both adjacent property and public wealth; brings into being a permanent, positive and certain value before unknown, and benefits, enriches the general public. The builder is the creator of this new and permanent addition to the community wealth.

Why, then, should he not be secured by and on this new creation of his labor and his material?

3. It is impossible to mortgage something that does not exist at the time the mortgage is made. For this reason, every state gives a lien to the landlord on the crop to be raised on the farm rented from him.

But for this law, the man owing for a newly built house, could in a few minutes in the recorder's office convey it beyond reach of those whose confidence gave it to him. It prevents that bulk sale to the loss of those who furnished the stock.

The mechanic lien does this, and is justified by the same reasoning. Under no other law can record security be given for what is to be furnished for and put in a house from time to time in the future.

Did it ever occur to you that landed improvements is both the cause and consequence of civilization? In the unbroken forest the savage finds food and shelter to satisfy him, but the son of civilization clears away that forest and turns its trees into timber for countless uses, its land into productive fields, homes of comfort and busy cities.

For these reasons, legislatures have provided this security for the creators of public benefits, the makers of increased, permanent public values. The benefited, enriched communities, in mechanics' lien laws, concede to the authors of their benefits this means of securing payment of what is due them for and on these identical creations.

But this remedy is not conferred with a careless hand. Nor should it be. Those who invoke this law's aid, must ground their right to the security, not merely upon the abstract justice of their unpaid claim, but upon compliance with that law's commands. It goes beyond the common law to meet the needs of an advancing civilization far beyond the foresight of that common law. It meets those needs upon compliance with the conditions it imposes for the benefit of the community that concedes them, and common sense as well as the courts will justly hold that most substantial, if not exact compliance with those conditions is the price for the enforcement of a righteous remedy.

I say a righteous remedy, for this law is not to enrich the mechanic or material man. It is not to enable them to put up prices, nor to give them a monopoly. It has not one tariff feature. It is simply and no more than giving them security for what is justly due, honestly coming to them on the very thing their confidence in a man's honor has put in his possession.

Any law that will make a man pay an honest debt appeals to every credit man here, and to every honest man everywhere.

Somewhat of its history may interest and instruct.

A law never enforced but practically a dead letter on the books is either a matter of pretended sentiment, or the ruse of the demagogue to catch the voter. A law that is, not only universal, but frequently resorted to for relief, must be grounded upon genuine merit.

This law is of universal adoption, and of frequent enforcement. There must, then, be wisdom, justice and efficiency in it.

Mechanics lien laws are not new to legislation. They were part of the Civil Code, and a prominent feature of the Code Napoleon, that Napoleon counted a greater achievement than the military career that has made him immortal.

The first mechanic lien law in the United States was enacted in 1791, and was the work of James Madison and Thomas Jefferson for the District of Columbia. The next was in Pennsylvania in 1803, since when they have spread to every State. They exist in every civilized country on earth.

The first law of Illinois was passed in 1825, and was of but one short section. The principal laws since are the laws of 1845, 1874, 1895 and 1903.

Should I ever revise my law treatise on this law, to make the definition in itself, explain its power, I should define it as a mortgage which the state places on a delinquent debtor's improved premises, when his creditor for work done on, or material used in their improvement does what the state directs in its mechanics' lien law.

The state says, "If the man who has you put your labor or material in the improvement of his premises does not pay you, do as I, the state, direct in my mechanic lien law, and I will make that document a mortgage on that identical property that will wipe out dower and homestead; precede any conveyance by deed or mortgage placed on the premises after the contract for labor or material was made; defy bankruptcy, and be unaffected by any subsequent judgment against the owner of those premises.

Being placed by the state, in the exercise of its supreme power, makes this the most far-reaching security known to the law.

The Mechanic Lien Laws of Illinois

gives a lien to whoever contracts for an improvement, either with the owner of the land or with one who knowingly permits and authorizes its improvement. It prevents the petticoat protection the plunderer so often seeks, who puts his property in his wife's name, and makes the contract for its improvement in his own name. If the contract is made with her knowledge the lien covers the land the same as if she made the contract herself.

There are two classes of liens,—that of the original contractor and of the sub-contractor. Sub-subcontractors also are given liens, but as the method of enforcement is the same, I shall mention simply the liens of the contractor and the sub-contractor.

The original contractor is he who makes his contract directly with the owner; the sub-contractor who makes his contract with the contractor.

The original contractor secures his lien by filing in the office of the clerk of the circuit court, within four months after completion of his work or delivery of his material, a written and sworn statement, setting forth what his contract was for, the balance due after allowing all credits and the legal description of the property he claims the lien upon. This fastens his lien upon the premises from the date of the contract. That is, makes it prior to any conveyance by deed or mortgage made by the owner, or by his bankruptcy, or to any judgment rendered against him after the date of the contract, but it cannot be changed or amended after that four months so as to affect any other party than the owner. That is, cannot be amended so as to affect the rights of purchasers, incumbrancers or creditors.

He must enforce his lien by filing suit within two years, not after the date of filing his claim, but after the date of completion of work or delivery of material. If he brings suit within that four months he need not file his claim for lien. If he files it, he can delay the suit for the period named. Failure to so file the lien, or bring suit within the four months discharges it, so far as purchasers or creditors are concerned, and if suit is not brought within the two years, it is discharged as to all parties.

It is universally known that no one contractor can do or does do all of the work on a modern building. The masonry, carpentry, plumbing, steamfitting, are done by the special trades. For this reason, the lien is given to sub-contractors.

It is made the duty of the owner to demand, and of the contractor to give to the owner, prior to any payments to the contractor, a sworn statement of the names and addresses of all parties furnishing labor or material for the improvement, and how much is or will become due them. All payments made by an owner without obtaining such statement are void as to sub-contractors; that is, are not counted as credits as against the liens of sub-contractors.

If the owner pays the parties named in these sworn statements, the amounts given, he is entitled to credit those amounts on the original contract, and is not liable to sub-contractors for any amount in excess of that stated in the affidavit as due them, nor is he liable to those whose names are omitted from such statement.

The subcontractor secured his lien, not by filing such statement in the circuit clerk's office, but by giving to the owner in person, and in no other way, within sixty days after he has completed his work or finished the delivery of his material, a written statement of the amount due him and what for. This statement is worthless if sent by mail filed in the clerk's office, or delivered to any other than the owner himself. This secures his lien.

He is not allowed to bring suit to enforce that lien for ten days after service of such notice, that time being allowed the owner to confer with the contractor and learn whether or not the claim of the sub-contractor is correct.

The sub-contractor is given a shorter time to enforce his rights. He must bring suit within four months, not after the time he has completed his work or delivery of material, but after the time final payment is due him therefor, or his lien is lost.

If the sworn statement mentioned has been given by the contractor to the owner, the sub-contractor is excused from serving the written notice upon the owner, and if the owner, after receiving such notice does not, in writing, protest to the sub-contractor against his doing the work, or furnishing the material, that owner is made responsible for the full amount due them for what they do thereafter.

This may look severe, but were owners to protect themselves under this provision of the law, it would be impossible for any other than the original contractor to establish a lien on their property. So in that regard, the law is not a jug-handled one.

This is a brief summary of the law so often denounced for its technicality. There are necessary provisions as to pleading the practice that it would take too much time to dwell on here.

As to such technicalities, they are no more than exist in every calling and trade. Many of you earn and get large salaries as credit men, because you are experienced specialists in credits. There are many in this city who are paid thousands of dollars per year to buy nothing but woolens or silks. They have acquired their earning power, not by dreaming they could do things, not by thinking they were thinking, but by years and years of hard work and practical experience.

The red-shirted, rough clad man at the stock yards may not speak a correct sentence, but he'll tell you within ten pounds the weight of every steer in the thousands driven before him, when the college graduate couldn't come within 500 pounds of a single one. It takes technical skill, practiced experience to mix mortar, lay brick, or do anything else in the right way. It takes the same thing to properly prepare a mechanic's lien claim or notice or the pleadings to enforce them. The truth is that the denunciation of technical knowledge and proficiency in any trade, calling or law is a pure fake, condemned by all practical experience in every business. The "know how" comes only by doing the work. You get a surgeon, not your family doctor to cut off a disordered appendix.

Horace Greeley was a great editor, and a great man, but not a practical farmer. He wrote a book about what he knew about farming, and Mark Twain said when a suburbanite about to start a garden wrote and asked him if hen house droppings were good to put on potatoes, Greeley answered some people might like them, but he'd rather put butter on his. An old farmer who had "been there" might have given better advice.

I was much impressed by the statement of Dr. Gunsaulus in a recent sermon that, taken all in all, Leonardo da Vinci, the theft of whose "Mona Lisa" lately startled the world, was the ablest man in all history.

From his biography I found that he was, not only one of the world's first painters, but a mathematician, a scientist who anticipated Gilileo, a writer of many splendid works on scientific matters as well as art, a poet, philosopher, inventor, a Bacon and Edison combined, and was forcibly struck by this sentence of this universal genius, "The man who says his task is an easy one, is either unfit for that task, or incapable of comprehending it."

There is not a man here fit to hold his job but knows that that job is a hard one, and that he earns every dollar he gets by hard work.

It is a matter of severe study to understand any law. It is a difficult thing to either draft a satisfactory lien law, or to thoroughly understand it when it is drafted.

If God Almighty could not dictate a Book that every man would read with the same understanding and interpret the same way, it is going rather far to demand of mortal man the writing of any law that all men will read with the same understanding, and interpret the same way.

The man who attempts to write a law controlling any business has a serious job on his hands, and will never do it on the spur of the moment, nor without long and labored study, nor will he do it without consulting kindred laws drafted by able experience in other localities, and the interpretation learned courts have put upon them, and above all, without heeding the suggestions of the practical experience of those that law affects.

Nor will it do to indulge in wholesale denunciation of any law or proposed law, without taking a referendum to the practical sense and experience of the people whom it most concerns and therefore know best what it has done or will do to secure safety and justice in business, to build up conscience and commerce.

Recently building interests have been all upset by adverse decisions of the Supreme Court. Several changes in the law made by the act of 1903 have been held un-

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QUARRY AT MEDINA DAM.

One of the interesting features of the construction of the great dam across the Medina river near San Antonio, Texas, by the Medina Valley Irrigation Company is the operation of a large quarry which provides stone for the pulverizers and crushers. The quarry is equipped with two 10-ton, 35-foot radius locomotive cranes and with two well drills, nine hammer drills and two ordinary plunger drills. The stone is loaded on the flat cars and Continental 4-yard side-dump cars which are hauled over down-grade tracks to the crushers and cableway. After being unloaded the cars are pulled back to the quarry by mules.

An enormous amount of stone is required for the main dam, which will soon be finished. The height of the dam will be 166 feet and at its base it will have an extreme width of 136 feet and on top 16 feet. The length of the crest will be 1450 feet. In this length, however, will be two wings each about 350 feet long and about 50 feet high. An idea of the amount of stone that is required for the structure may be had when it is stated that the dam will contain 265,000 cubic yards of concrete. It is of solid concrete construction with large "plums" for boulders embedded in the mass.

The rock crushing plant consists of two No. 7½ D. Gates crushers and two 36-inch Symons crushers. The engines that are used for driving these crushers and for driving the concrete mixers, conveyors and puverizers are situated adjacent to the crusher plant. The material, after it comes from the crushers, is carried by belt conveyors with bucket attachment to the top of a high material bin which has a capacity of 1,000 cubic yards of crushed stone and 600 cubic yards of sand and dust. The conveyors deliver the material from the crushers to revolving screens which separate the dust and deliver it to one bin, the sand or fine gritty product of the crusher going to another bin and the stone to the main compartment. Part of the stone is deflected back into a chute which carries it down to the 36-inch Symons crushers where it is further reduced in size and returned through the same screening process. Another portion of the finer screenings is delivered to two 18-inch Symons disc crushers and to two Williams pulverizers which are located at the top of the bins. By means of the above described system of pulverizers and crushers the stone is reduced into three sizes and by proper mixing of these and accurate proportioning an exceedingly dense and strong concrete is obtained. Under the bins is located a battery of mixers consisting of five No. 14 Smith mixers each having a capacity of one cubic yard per batch and 30 batches per hour, making a total capacity with four mixers running and one in reserve of 120 cubic yards per hour. Stone, sand and dust are delivered direct into the mixer hoppers from chutes in the bottom of the bins. Cement is delivered by belt conveyor from either the shed or direct from the cars to the mixer platform, where it is opened by hand and dumped into the hoppers. Water is delivered from automatic tanks controlled from the platform. The company also has in operation a very complete plant for placing the concrete and rubble stone in the dam and for handling the forms.

THE MEDINA DAM

The Medina Valley Irrigation Company has its principal office in San Antonio. The stock is held chiefly in England. The work of constructing the dam is being done by the Pearson Engineering corporation of New York, which is a subsidiary of the Medina Valley Irrigation Company.

Considerable stone is also being used in the construction of the diversion dam, which is situated a few miles below the main dam. The diversion dam will be 48 feet high and have a width of 46 feet at its base. It will be curved with the convex sides up-stream, the radius being 700 feet.

CONCRETE CORNER AND GATE-POSTS

Nothing gives more trouble and injures the appearance of property so greatly as sagging gates and fences caused by rotten gate and corner-posts. Property owners are rapidly getting rid of this nuisance by making such posts of concrete.

The concrete post shown below is a home-made article according to the owner's plan. It has been in service five years and is easily good for ninety-five more. The post and braces were molded in position and as one piece. The post proper is 10 inches square and the braces 6 inches. They extend 3½ feet into the ground and end in a bulb of concrete.

Forms for Post and Braces.

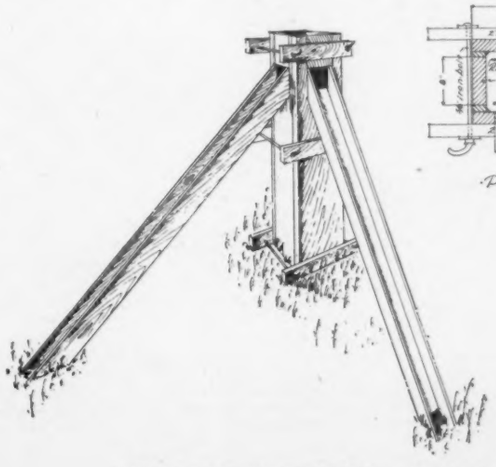
For the post mold proper, two-inch lumber makes a stiff form. Cut two boards 2x10-inch and two 2x14-inch, all 7 feet 6 inches long. (For the 2x10, a 2x4 and 2x6-inch piece may be substituted; likewise for the 2x14-inch, a 2x6 and a 2x8-inch may be used.) The 2x10-inch pieces are nailed to the three sets of 2x4-inch cleats as shown in the drawing. Holes are bored in the cleats so that the ⅝-inch bolts 18 inches long, running across the forms from cleat to cleat, will rest against the 2x14-inch boards and hold the box-like form in shape. One-inch triangular-shaped strips tacked in the corners of the form will bevel the sharp edges and produce a neater appearing post.

Each form for the braces consists of two side pieces, 1x6 inches, and one bottom piece, 1x8 inches, all 10 feet long. Nail the pieces together in the form of a trough six inches deep. To make the bevel joint with the post form, lay off 3½ inches on the lower edge of the side pieces at one end and saw off the trough to the bevel. In the side pieces of the post mold, eight inches from the top, cut an opening extending downward 7 inches deep and 8 inches wide to receive the molds for the braces.

Mixing the Concrete and Molding the Post.

With the forms ready and all of the material on hand, dig the hole 3½ feet deep for the post proper. At distances of 9 feet 6 inches from the center of the finished post dig another hole 3½ feet deep for the concrete bulb in which the brace will end. One foot above bottom of this hole, open a trench 8 inches wide sloping upward towards the corner post to a point within 7 feet of the center of it.

Mix the concrete, 1 bag of Portland cement to 2 cubic feet of sand to 4 cubic feet of crushed rock, or 1 bag of cement to 4 cubic feet of good pit gravel. Make the concrete mushy wet and fill the holes to the depth of one foot. Set the mold



FORMS FOR ONE-PIECE POST AND BRACES

HOME-MADE CONCRETE CORNER POST

for the post in position and slide the troughs for the braces into the openings, with the upper ends even with the inside of the post form. Fasten them securely and chink the cracks with old rags. Brace all forms firmly. Down the post form, two inches from each corner, set a ⅜-inch rod 10 feet long with the upper ends bent backward. Fill the post form with concrete to the openings of the braces. Place one inch of concrete in the troughs for the braces and lay upon it, one inch from each side, two ⅜-inch rods with their upper ends extending into the post mold. Put in 4 inches more of concrete, place two more rods in a similar manner and then another inch of concrete. Work rapidly and without delay finish filling the post form with concrete. After the concrete has stiffened, bevel the top edges of the post and the upper edges of the brace with a trowel.

For each post with two braces, there will be required 4 bags of Portland cement, 8 cubic feet of sand, 16 cubic feet of crushed rock (or 4 bags of cement and 16 cubic feet of bank-run gravel), and 12 pieces of ⅜-inch rods 10 feet long. These materials will cost about $2.50.

Curing the Post and Stringing the Fencing.

See that the post is fenced off so that animals cannot disturb it before the concrete has acquired its strength. After 7 days the forms may be carefully removed. Do not use the post until it is 30 days old. Many persons make corner-posts in the fall, before the freezing weather, and do not place the fencing on them until the next spring. The wire fencing may be pulled around the post, as shown, or ratchet fasteners may be attached by making holes through the post by means of small gaspipe set through holes in the form or by means of greased rods turned frequently while the cement is setting.

The same form is adaptable to brace-posts in the fence line or to gate-posts. Hinges and fasteners for gates can be secured in the manner described above for ratchet wire-tighteners. For entrance ways, very attractive ornamental posts can be made in the same general method.

HOW TO PATCH A CONCRETE FLOOR.

When a cement floor surface begins to wear it is often desirable to patch it. Leonard G. Watson, president of the Aberthaw Construction Co., Boston, in a recent paper, states the right way and the wrong way.

The Wrong Way.—Commonly a sand and cement mortar is made, some cutting is done and the mortar is put in and scrubbed with a steel trowel until smooth. It is then covered up for a while. If the concrete under the patch is left dry it soaks up the water of the mortar. As a result, the mortar does not set. If the room is dry or hot the surface of the patch dries out for the same reason it does not set. If the concrete under the patch is dusty the patch does not adhere to the concrete. If the materials in the mortar are not suitable, naturally the patch wears badly, particularly as it is obviously located at a point of severe wear.

The Right Way.—Cut down the worn place at least one and a half inches. This cutting should be carried into the strong unbroken concrete and the edges should be cleanly undercut. The bottom of the cut should then be swept out, clean-blown out with compressed air or a pair of bellows, if available, then thoroughly wet and scrubbed with a broom. In this way, small loose particles of broken material which the chisel has driven into the surface are removed. A grout made of pure cement and water about the consistency of thin cream, should be scrubbed into the pores with a broom or brush, both at the bottom and sides of the cut. Following this a stiffer grout, about the consistency of soft putty, should be thoroughly compressed and worked into the surface, which has already been spread with grout. Finally, before the grout is set a mortar made of one part cement to one part crushed stone or gravel, consisting of graded sizes from ½-in. down to the smallest, excluding dust, should be thoroughly mixed and put in place, then floated to a proper surface. Cover with wet bagging, wet sand, sawdust, or other available material. All trucking should be kept off and the surface kept thoroughly wet for at least one week or ten days.

If a particularly hard surface is required, 6-penny nails are sometimes mixed with the mortar and other nails stuck into the surface when the patch is finished. This will produce a surface which is extremely hard and durable.

President S. Casteel, of the Fifty Thousand Club of Rock Island, has been authorized to secure estimates on the cost of building a new concrete, macadam or brick road near Milan.

IMPROVED HIGHWAYS

The Texas Good Roads Association convened in annual session at Dallas, Texas, October 18. An address on "The Value of Good Roads to a Community, a County and a State," was delivered by Judge Dunlap, president of the association. He stated that the good roads of Ellis county would save the people of that county $100,000 annually in transportation charges, and that on such a basis they will have paid for themselves almost before their newness shall have worn off. He said:

"The importance of the work of this organization can not be overestimated. Our program embraces several addresses by capable and experienced gentlemen who feel a keen interest in the building fo a good system of highways in Texas. To accomplish this requires a vast amount of educational work on the part of a few who appreciate the magnitude and importance of this work. The press of our State is one of the most potent factors in accomplishing good results in the campaign of road building, and almost universally they are active advocates of good roads. Efficient and practical laws on road building are an absolute essential to a system of public highways."

He stated that in his opinion there is no better class of securities than the road district bonds, and that there is no reason why a five per cent bond of this class should not be sold at par. Continuing he said, "Many counties are confronted with the want of proper material for building roads. I think this could be obviated if the State would establish crushing camps in localities where material can be found. The State convicts could be used, with practical results, in furnishing material for road building. There are many counties with abundance of good road material which could thus be utilized. Ellis county, of which I have the honor of being a citizen, is fortunate in having a fine quality of good gravel suitable for road building. Since the passage of the road district law, our citizens have organized nine road districts. The aggregate bond issue of the nine districts is $980,000. Out of this fund we have finished 260 miles of good pikes. The total miles that will be built out of this money will be over 300 miles. There have been built more miles of good pikes in Ellis county, in a shorter period, than in any county in the State. Our citizens are highly pleased with the result."

Col. E. W. Kirkpatrick of McKinney stated that good roads are the life blood of commerce. If railroads are the arteries, then good roads leading to the railroads are the veins of commerce and play a part equally important. He further said, "That because of the absence of good roads a hardship was worked upon the young and ambitious by following a life in the isolated country, kept aloof from the throbbing city by reason of impassable roads. Bad roads invite immigration of the worst sort of people, and good roads invite immigration and settlement of the better class."

Homer D. Wade said: "So far, the great factory and population centers are out of the State. The time will come when these conditions will not obtain, but it is not soon, and in fact it is so far in the distance that we can not afford to wait and will be hastened only by the advent of public roads. Texas has in round numbers 140,000 miles of public highways, a mileage that will reach around our globe five times, and yet of this great mileage only 3.8 per cent is improved in any manner, while Rhode Island has 49.14 per cent. We have half a mile of highway to each square mile of area, while Connecticut has 2,60 miles. Texas has thirty persons to each mile of highway, Rhode Island 256 and Massachusetts 195. The average mileage of highway to the square mile of area in the United States is 8.66, but as already stated Texas has only 2.60.

"The year 1911 has been the banner year in the road bond elections in Texas. So far the total amount of bonds being voted that year, realizing the tremendous figure of $8,915,000. In 1910 there was less than half that amount, the figure being $4,105,000.

"In 1912 the bond issues have not been quite so numerous as either of the preceding years. Up to this date forty road bond elections have been held. Of this number, 26 carried, 14 failed. Bonds voted upon aggregated $4,173,700; of this amount $2,371,200 carried, while $1,802,500 were defeated."

D. E. Colp, secretary of the Bexar County Highway League, related some of the progress made in the Southwest in the matter of good road building. San Antonio, he said, has taken active interest in the work of good roads and has succeeded in launching a number of projects that are of great consequence in the commercial life of the Southwest, as well as being of valuable advantage to the people from the standpoint of pleasure.

The good roads enthusiasts in San Antonio work under a definite system.

BOOST CONCRETE ROADS.

At a banquet of the county board of Kenosha county, Wisconsin, and a large number of citizens of Kenosha at the Hotel Pfister recently, the concrete roads of Milwaukee county were the subject of much favorable discussion.

The party inspected the roads of Milwaukee county with the idea of ascertaining the best grade of permanent road to be laid throughout Kenosha county, in which improvement it is planned to spend $50,000 this year. The members of the board expressed themselves pleased with the concrete roads.

Among those who spoke were H. J. Kuelling, Milwaukee county highway commissioner; Dr. N. R. Pennoyer, W. T. Monette, Russell H. Jones, M. A. Kent, P. H. Tobin and Frank Shuard.

The Wayne county (Michigan) road commissioners are contemplating the building of about twenty-six miles of concrete roads in that county.

AMERICAN ROAD BUILDERS' ASSOCIATION.

Arrangements for the American Good Roads Congress and ninth annual convention of the American Road Builders' Association at Cincinnati, O., Dec. 3, 4, 5 and 6, have been practically completed. The plan adopted last year of considering certain specified subjects each day will be adhered to this year, although a somewhat greater subdivision of the main topics has been made. The first session on Tuesday, Dec. 3, will be devoted to the usual addresses of welcome and responses, and a presidential address by Nelson P. Lewis, chief engineer of the Board of Estimate and Apportionment of New York City, and president of the American Road Builders' Association. Six of the seven remaining sessions will be devoted to the presentation of technical papers and their discussion, and one session will be used for the annual business meeting of the association.

The tentative program of the technical sessions includes three papers on the organization of highway departments of states, large cities and small cities respectively. The first will be presented by Major W. W. Crosby, consulting engineer of the Maryland State Roads Commission; the second by Wm. H. Connell, chief engineer of the Bureau of Highways, Philadelphia, Pa., and the third by a speaker yet to be announced. The development of a plan for a state or county road system will be treated in a paper by an authority yet to be announced, as will also the construction of stone and brick pavements. The building of earth and gravel roads will be treated in a paper by Robert C. Ferrell, state commissioner of public roads of Kentucky. The subject of bituminous pavements for cities will be presented in a paper by George W. Tillson, consulting engineer of the Borough of Brooklyn, New York City, and Ellis R. Dutton, assistant city engineer of Minneapolis, Minn., will describe the construction of wood block pavements by the day labor plan now in force in that city. Three papers on questions of importance to all engaged in either road or street work will be presented by Col. Wm. D. Sohior, chairman of the Massachusetts Highway Commission, will speak on the importance of the traffic census as a preliminary to the planning of road improvements. Clifford Richardson, consulting engineer, New York City, will discuss the economics of road and paving construction and Arthur S. Lewis, secretary and superintendent Lincoln Park Commission, Chicago, Ill., will discuss the value and importance of cost data. Contractors will hear the matters with which they are especially concerned discussed by Hugh Murphy, a well-known public works contractor of Omaha, Neb., who will present a paper on the general subject of the problems of a road contractor, and by F. E. Ellis, manager of the Essex Trap Rock & Construction Co., a prominent road contractor of Peabody, Mass., whose subject will be plant equipment. It is probable that the technical program will also include two or three other papers dealing with specific work of interest to road builders and with general questions with which they are concerned.

In addition to the day sessions, at least one evening session will probably be held at which illustrated addresses will be made. This, together with other features incidental to the convention, will be announced later.

Concrete

National Association of Cement Users

Meets Annually.

OFFICERS.

Richard L. Humphrey, Philadelphia.....President
E. D. Boyer, Catasaqua, Pa.....1st Vice-President
Arthur N. Talbot, Champaign.....2nd Vice-President
E. S. Larned, Boston, Mass.....3rd Vice-President
Ira H. Woolson, New York, N. Y.....4th Vice-President
E. E. Krauss, Philadelphia, Pa.....Secretary
H. C. Turner, New York.....Treasurer
P. S. Hudson, Louisville, Ky.—Common Building Blocks and Cement Products.
H. S. Doyle, Chicago—Exhibition.
W. H. Ham, Boston, Mass.—Insurance.
A. E. Lindau, St. Louis, Mo.—Re-inforced Concrete Building By-Laws.
C. W. Boynton, Chicago—Roadway, Sidewalks and Floor.
L. C. Wason, Boston—Treatment of Concrete Surfaces.
R. P. Miller, New York—Fire-proofing.
Robert A. Cummings, Pittsburg, Pa.—Measuring Concrete.
Peter Gillespie, Toronto, Canada—Nomenclature.
Sanford E. Thompson, Newton Highlands, Mass.—Specifications and Methods of Tests for Concrete Materials.
Logan Waller Page, Washington, D. C.—Education.

CEMENT USERS' CONVENTION.

The ninth annual convention will be held in Pittsburgh, Pa., December 10-14, 1912, inclusive, the convention proper opening on Tuesday evening, December 10, and closing on Friday evening, December 13. The sessions and headquarters of the convention will be at the Fort Pitt Hotel.

During past years there have been numerous suggestions as to the desirability of confining the convention to a shorter period of time in order to enable a greater number of the members to remain throughout the convention, as it is impracticable for many to stay an entire week. Pursuant thereto the Executive Board has decided to reduce the convention period this year by practically two days, and in order that an equal amount of work may be accomplished afternoon sessions will be held, as is indicated in the attached tentative program. No session will be held on the evening of the opening of the Cement Show in order that opportunity may be afforded the members to attend the same.

Pittsburgh was selected this year in pursuance of the established policy of holding the convention alternately in the East and West and for the further purpose of not only permitting the attendance of Eastern and Western members but also those from the South. The place of the convention is within a night's ride of a large majority of our members. From present indications your Executive Board feels assured that this will be one of the best attended meetings in the history of the organization. Many important specifications will come up for consideration and a greater opportunity will be afforded this year than heretofore for their thorough discussion.

Tentative Program.

Tuesday, December 10—10 a. m., meeting of Executive Board; 2 p. m., meeting of sectional committees; 8 p. m., formal opening of the convention; addresses of welcome; announcement of committees.

Wednesday, December 11—9 a. m., Sectional Committee meeting; 10 a. m., reading of committee reports and papers; 2 p. m., reading of committee reports and papers; 8 p. m., opening of Cement Show.

Thursday, December 12—9 a. m., Sectional Committee meeting; 10 a. m., business session, report of Executive Board, election of officers, committee reports and papers; 2 p. m., reading of committee reports and papers; 7:30 p. m., annual banquet.

Friday, December 13—9 a. m., Sectional Committee meeting; 10 a. m., reading of reports and papers; 2 p. m., reading of reports and papers; 8 p. m., reading of reports and papers, report of Committee on Resolutions, unfinished business, adjournment.

Saturday, December 14—9:30 a. m., visit to United States Government testing laboratories, Old Arsenal grounds, Fortieth and Butler streets, Pittsburgh, Pa.

PITTSBURGH CEMENT SHOW.

Strenuous efforts are being made to bring out the greatest possible attendance to the Pittsburgh Cement Show, Exposition Hall, December 12 to 18. The assistance of the railroads entering Pittsburgh has been enlisted and instructions have gone out from the general passenger agents to their local agents to make a personal canvas of all the building material dealers, contractors, engineers, architects and cement products manufacturers in the various towns along the lines of the railroads.

Traffic Manager F. E. Guy has been actively at work for several weeks directing the work of the railroad agents in advertising the cement shows. Hundreds of thousands of circulars have been sent out by the Cement Products Exhibition Company, as well as by the National Association of Cement Users. The space in Exposition Hall has been nearly all taken up by exhibitors. Elaborate displays will be made by the most substantial concerns manufacturing material and supplies used in concrete work.

A new set of posts, railings, partitions and signs have been designed and are being built for the exhibition. A military band has again been secured to play during the period of the show. Special exhibits are being prepared and will be installed by the Carnegie Technical Institute, of Pittsburgh, as well as by the University of Pittsburgh. These exhibits will be educational in nature and based upon the courses offered by these two institutions in concrete construction and will also show the results of tests and investigations conducted. In addition to these two displays there will be elaborate educational exhibits by the Association of American Portland Cement Manufacturers. The Bureau of Standards of the Department of Commerce and Labor and by the Pittsburgh Chapter of the American Institute of Architects in co-operation with the Pittsburgh Architectural Club.

An extensive newspaper campaign of advertising will be carried on in the Pittsburgh daily papers during the cement show.

The Pittsburgh Industrial Development Commission are taking an active interest in promoting the cement show and in assisting in the arrangements for the ninth annual convention of the National Association of Cement Users, which will be held in the Fort Pitt Hotel. The publicity branch of the commission are already sending out newspaper articles to the press all over the country.

AN INSTRUCTIVE EXHIBIT.

A most elaborate and instructive exhibit will be made at the Pittsburgh Cement Show, December 12-18, 1912, and at the Chicago Cement Show, January 16-23, 1913, by the Bureau of Standards, Department of Commerce and Labor. Large space has been taken and a brief outline of the character of the exhibit and demonstrations is as follows: Various cement test pieces, apparatus used in testing cement, apparatus for standardizing sieves and specific gravity bottles, an exhibit of concrete electrolysis test specimens, a chemical exhibit showing the standard method of analyzing cement, a strain gauge with diagrams showing the value of strain measurements to the engineer, an interferometer mounted on a concrete test beam showing the possibilities of precise measurements, various types of pyrometers for high temperature reading, clay and lime test specimens, with perhaps several other pieces of apparatus illustrating the scope of the bureau's work. This exhibit will be accompanied by various diagrams and photographs and a collection of the publications of the bureau.

NEBRASKA CEMENT USERS.

The Mid-West Show at Omaha, February 4, 5, 6 and 7, will be the only show held west of Chicago this year. Can you afford to miss it?

Listen: There will be a five-day show at the spacious Omaha Auditorium. This show draws immediately from Iowa, Missouri, Kansas, Oklahoma, Colorado and the entire West and Southwest generally. This will be the seventh annual show. Six successful shows have been held under auspices of the Nebraska Cement Users' Association, one of the strongest organizations of cement users in the United States.

On the last night of the show last year a delegation of over one-half of the exhibitors called on the Board of Directors then in session and signified their willingness of contracting then and there for space for this year's cement show. What more argument do you want? The rates are very reasonable, and the dates for the show are neither too early nor too late. They come at a time when the successful contractor and manufacturer has cleaned up his work, invoiced his stock and equipment, closed his books, figured out his profits and is ready to buy new machinery and equipment. Write to Frank Whipperman, secretary, Omaha.

Union Concrete Company, Chicago; capital, $5,000. Incorporators: Jacob H. Shay, Philip S. Townsend and George B. Byron.

CONCRETE REPLACES WOOD.

Concrete bridges are replacing wooden bridges in Illinois, which are under state highway supervision. At the request of township and county boards the highway department is authorized to prepare plans and specifications for bridges as indicated. As the commissioners already have erected several hundred bridges under the new method, State Engineer A. N. Johnson has become known as an expert. By the new concrete bridge propaganda thousands of miles of road have been made available for general traffic.

Illinois being flat many short-span bridges are required, either close to the surface of the water or at the end of steep approaches. These approaches wash easily in freshets, especially under the old method, where piles were utilized that rotted, and steel tubes that rusted, became undermined. It was found that thousands of steel bridges had been erected at prices out of proportion to their real value. With these problems in mind concrete bridges were built, which stood tests satisfactorily. From these tests general plans and specifications were worked out, subject to local modification.

The concrete bridges are mostly of the girder type, erected at much less than the steel structures formerly cost. End piers are set deep into the banks, provided with wing walls, and extend down to solid foundations.

In an arch type of bridge the thrust pressure against the end piers, which is naturally transferred to the banks, is severe, and as the banks become soft in wet weather the stability of such a structure might be endangered. Another reason is that a girder bridge offers greater clearance and therefore freer movement of water in flood.

GREAT SIPHON COMPLETED.

A three days' celebration, unique and original, is to be held at Yuma, Arizona, November 18-20, to commemorate the completion of the enormous siphon which is now carrying the waters of the Colorado River to the main canal on the Arizona side of the Valley.

The program for the occasion follows:

Dedication of the Grand Siphon; trip to the wonderful Laguna Dam; military and civic parade; dedication of the Elks' Home; trip through the great Yuma Valley; $1,000 in prizes for athletic events; grand display of fireworks; reception by all fraternal orders; grand galaxy of carnival attractions.

This huge bore, 15 feet in diameter and 1,000 feet long, passes under the Colorado River. Flowing through it is a portion of the stream which has been diverted into a canal on the California side by the Laguna Dam 12 miles above. The volume of water passing through the siphon is calculated at 1,400 second feet or 3,769,920 gallons per minute. Up to the present season all the irrigation at Yuma has been done by pumps lifting water from the river. This method has been expensive and the development of nearly 100,000 acres of very fertile land has been held in check. With the assurance of an abundant supply of gravity canals the valley has taken on a new life and is getting ready for an era of progress and development. Yuma will offer her visitors an abundance of tropical fruits and flowers, and a hospitable welcome on this occasion.

A portion of the King Edward highway is to be built of concrete, the contract having been let on September 11th by the Hon. J. E. Caron, minister of agriculture and highways of the province of Quebec. The King Edward highway is the Canadian section of the international highway connecting Montreal with several large cities of the United States. Ultimately, it is expected that this road will continue as far south as Miami, Fla. It was the original intention that the entire highway should be built of macadam; but the honorable minister, who has under his jurisdiction the Canadian branch of the work, has become interested in concrete roadways and has decided upon this important undertaking as a good place to try it out. Governments and municipalities are gradually coming to recognize the necessity of a more permanent form of roadway construction. That concrete is the material which best fulfills all the requirements of a permanent roadway is a fact that will ultimately obtain world-wide recognition.

The secretary of state today issued a license at Springfield, Ill., to the Waukegan Pressed Stone Company, a concern which is to operate a plant at Waukegan in the near future. The capital stock is $35,000 and the incorporators are: Carl E. Sayler, Homer Cook, Charles Pence, Charles E. Bairstow, John D. Pope.

CONCRETE IN FAR NORTHWEST.

One hundred thousand dollars is the estimated cost of a three-story market building to be erected by the municipality of Edmonton, Alta., early in 1913. The plans, prepared by City Architect Jeffers, show a structure of horseshoe shape built of re-enforced concrete and brick with stone trimmings. The site chosen for the building is the present hay market in First street, which is served by the municipal street railway and is within easy distance of the Grand Trunk Pacific, the Canadian Northern and the Edmonton, Dunvegan & British Columbia railroads. The last named line is under construction and will serve the north country.

Provisions have been made for stores and offices in the wings of the building, which will face First street and Queens avenue. An arcade entrance will lead to the market proper, consisting of long rows of stalls, where market gardeners and growers will be able to display their products and deal directly with the consumer. It is probable that a refrigerating system will be installed in the butter and egg and fowl and meat departments. The building to be erected next spring will form part of the general market. It is expected that a by-law to provide funds will be submitted to the rate-payers in a short time.

Commissioner Chalmers, who has charge of the plan, is taking time by the forelock, so to speak, saying that when a market is assured the truck-growers and dairymen and poultry raisers will follow. The market is to be the central point for the entire street railway system as well as for all the suburban lines on the north side of the Saskatchewan river. The suburban roads will become express lines within the city limits, running direct to the central station. This will facilitate the handling of products from the suburban communities and will be the means of settling the close in districts.

In connection with the opening of the First street market, it is expected that many improvements will be carried out. A. U. Morrel, of Minneapolis, who is preparing the "city beautiful" plan for Edmonton, has indicated on his diagrams certain sections that will be ideal for market gardeners. With a market in which to sell their produce, the business of market gardening will become lucrative and popular in and around this city.

Commissioner Chalmers also suggested that a member of the city council should be sent on an extended tour of the principal cities of the United States and Canada to study market buildings, and surroundings, also ascertaining how they are patronized and how the transportation problem is handled.

Mr. Robertson, superintendent of the public market, is enthusiastic over the project, saying that it will pay from the beginning, as there are already sufficient producers in and near Edmonton to take up all the stalls to be set aside for actual growers.

Further extension of municipal ownership at Edmonton, Alta., was indicated when the commissioners directed City Engineer Latornel to report upon the cost of installing a paving plant of not less than 100,000 square yards capacity during the building season, also to engage a construction engineer qualified to take charge of the city's paving work. The plant is to be in operation early next spring. The cost is estimated at between $40,000 and $50,000.

The office of construction engineer is a new one in the city's service. His duty will be to take charge of the plant and supervise the paving work. The city will compete with private firms in all municipal work, taking contracts to keep the plant running at full capacity throughout the season.

Five hundred thousand square yards of new pavements will be laid by the city next year, as against about 250,000 square yards put down during the season of 1912. It is expected that the specifications will be announced in January or February, giving ample time for contractors to assemble men and materials.

NEW YORK CONCRETE NEWS

New York, N. Y., Nov. 20.—A representative of the Turner Construction Company, which, by the way, is one of the largest constructors of reinforced concrete structures in the East, reported that the amount of work on hand is keeping them very busy. The volume of business that began to come to hand at the beginning of the fall season has continued steadily up to the present time. The following new contracts have been received recently.

The Turner Construction Company has received the contract for the reinforced concrete work for one-story factory and warehouse, 246x631 feet, to be erected for the Standard Oil Company of New York, at foot of 10th street and Creek Canal, Long Island City, to cost $100,000. The general contract for the five-story reinforced concrete warehouse, 40x100 feet for Lehn and Fink, 120 William street, New York City, to be erected at 85-87 Sedgwick street, Brooklyn, N. Y. The architects are Maynicke & Franke, 25 E. 26th street, New York City.

Maynicke & Franke, 25 E. 26th street, New York City, architects, are praparing preliminary plans for the New York Dock Company, 10 Bridge street, Brooklyn, N. Y., for a reinforced concrete loft factory to be erected at the Erie Basin, Harrison and Van Brunt streets, Brooklyn, N. Y. Bids will be received about December 1.

A five-story reinforced concrete and brick factory 50x80 feet, will soon be erected for Charles M. Berger, 32 E. 21st street, New York City, at Underhill and St. Marks avenues, costing $30,000. Architect, D. A. Lucas, 98 3rd avenue, New York City.

The Dri-Crete Company of Manhattan has been incorporated to manufacture waterproofing, etc., with capital of $25,000. The incorporators are Henry E. Cornwell, 576 5th avenue, New York City; David J. Gitto of New York City and George W. Bannerman of Hempstead, L. I., N. Y.

The Fillmore Concrete Mixer Company, of Fillmore, N. Y., has been incorporated with capital of $15,000, to manufacture concrete machinery. Incorporators: Samuel G. McTarnaghan, Jessie H. McTarnaghan and S. J. Chandler, all of Nunda, N. Y.

PITTSBURGH CONCRETE NEWS

Pittsburgh, Pa., Nov. 20, 1912.—There has been a noticeable dropping off in requisitions and contracts for reinforced concrete work in and near this city during the past two or three weeks. Part of it is attributed to the usual approach of winter, which puts a stop to most work of this kind. There is, however, quite a little question among engineers as to why there is not more of this work going on at present with business as good as it is now and so many municipal improvements going forward. The total of reinforced concrete contracts to date is probably considerably larger than in 1911, but with the October building records showing a big slump in the city building there is not likely to be any gain made during the last quarter of the year. Competition has been very close and many firms have refrained from urging clients to put in their work.

Pihl & Miller have the contract for putting in the foundations for a big coke plant for the Reliance Coke Company, of Pittsburgh, at Denbeau, Pa. It will likely require about 3,000 cubic yards of reinforced concrete construction and will cost $25,000. This same firm has the contract for building a reinforced concrete coal bin for the Republic Iron & Steel Company of Youngstown, to be located above Brownsville, Pa.

Irwin & Witherow are feeling good over the exceptionally fine weather which makes it possible to hurry along operations in reinforced concrete construction. They have the Kelly building at Ninth street and Duquesne way well under way and are rapidly finishing up their other summer projects.

The Reinforced Concrete Construction Company, which has been in business for six years in Pittsburgh, with offices in the Fulton building, is going out of business this week. Its officials complain that competition has been too close to bring any good profits to any firm the past year.

The Penn Land Company has been formed at Punxsutawney, Pa., and will manufacture concrete, cement and other building supplies. It will have a plant 50x510 feet.

The Linker-Losse Company has nearly completed 3,000 lineal feet of concrete wall in East Ohio street, Millvale, North Side, for the Pennsylvania Railroad Company. This will permit the widening of this street from the Pittsburgh line through Millvale.

The Cranford Construction Company reports that this year is something like 1,500 per cent better than last year, judging by the contracts and prospects in its own office. While comparatively little work has come on to the boards the past two weeks for bidding, the fine weather is helping out the concrete people greatly and the Cranford people say the prospects for next year are exceptionally good.

LOUISVILLE CONCRETE NEWS

Louisville, Nov. 19.—Undisturbed by pre-election activities, which exercised much effect on other lines of business, concrete workers of Louisville are moving along without a halt on the numerous contracts which are demanding their attention. While the concrete men took a healthy interest in the political situation, none allowed the presidential year to interfere with his own trade. While other lines of business sat back to await developments, the concrete men of the Kentucky metropolis kept their eyes focussed on the work in hand, and are now in many instances completing big jobs and preparing for the beginning of new ones.

Should the weather continue favorable, the coming winter will surpass all previous ones in volume of business done by concrete men, it is believed. The vast number of contracts ahead is a guarantee of activity for members of the Louisville trade. Practically very building of size which is going up is providing fat contracts for concrete workers in Louisville, while big structures going up at other Kentucky points also are contributing to the prosperity of the trade.

The new Mercantile building to be erected at Fourth street and Broadway has been turned over to the Central Concrete Construction Company, of Louisville, the excavation having been completed. The concrete contract amounts to about $16,000, while the advertising which accompanies it is worth a good deal besides. The Mercantile building will be the only one of its kind in the Gateway city, being erected on a site which is considered one of the most valuable in Louisville, and which for several years was tied up in litigation. The structure will be but two stories in height. The ground floor will be devoted to stores, while the upper story will be an immense dance hall, for exclusive balls. The Central Concrete Construction Company has other work on hand and in view which will give it plenty to do during the coming winter. The Mercantile building, however, will demand the utmost care, and officers of the company are taking pains to make it perfect in every detail.

The plant of the Unit Brick & Tile Company, of Louisville, has been closed down for repairs and will not again be opened until spring. The feature of the changes which are being made consists of the installation of a paraffine mold, replacing a steel mold, which is generally used throughout the country. The paraffine, after use, is melted in hot water and will be used over and over again, cheapening production of cement and other bricks to a marked extent. Officers of the Unit Brick & Tile Company believe that between ten and fifteen thousand more bricks will be made daily under the new method, while the cost will be greatly decreased. The inventor of the paraffine mold is H. S. Owens, an Eastern man, who has patented his discovery. The Louisville brick concern is now endeavoring to secure state rights on the mold, and if successful will market it in the Blue Grass state. President Dennis Long and other officers of the company are confident that the new method will prove a big success, practically revolutionizing the cement brick industry. It is stated that the paraffine molds have been subjected to severe tests and have proven successful in all. The inventor asserts that the new system may be adapted to other kinds of work, and the paraffine molds may therefore figure in various other construction branches. While the Union Brick & Tile Company's plant has not been in operation for some time, the sales force has continued work and has succeeded in cleaning out the yards. The last big shipment consisted of twenty-five carloads, which were used in the construction of the new Burley Tobacco Company's warehouse at Lexington, Ky. The big order put the finishing touches to the depletion of the yards of the Louisville brick concern. President Long, who recently returned from an European trip, is now giving his attention to the installation of the new paraffine mold, as well as the negotiations for the Kentucky agency.

An unique experiment, at lease as far as Louisville is concerned, is now being conducted by the board of public works, in repaving Main street, between Fourth and Fifth. The old granite blocks which have been used on that thoroughfare for many years are being turned over and will be surfaced with concrete, which is expected to make the street as smooth as could be. The experiment followed protests from business men along Main street, which is the main wholesale business street of Louisville. It was stated that the terrific din caused by the passage of heavily loaded wagons made office work almost impossible. The business men asked for wood blocks for the street, but City Engineer Lyman hit on the expedient of using the granite blocks now in use. The blocks were laid in 1882 and the heavy traffic which has passed over them has resulted in the wearing away of the corners, hence the unbearable noise. Construction men of Louisville are watching the new method with much interest. If successful it will doubtless be brought into play in many other cases, meaning a big saving to the city. The work is being done by laborers under the supervision of the city engineering department.

The National Concrete Company, of Indianapolis, Ind., has been awarded the contract for the erection of a concrete bridge over Beargrass creek, Louisville. The bid was $3,150. The bridge will be constructed near Castlewood. Work will begin at once.

The Charles F. Fitch Company, of Louisville,

has occupied new quarters on North Third street, near the Ohio river, moving from its former home in the Lincoln building at Fourth and Market streets. The company now shares a building with the Sam F. Troxell Company. The Fitch Company has completed the concrete work on a bridge which spans Salt river at West Point, Ky., and is now ready to begin work on numerous other contracts of importance.

The Henry Bickel Company, of Louisville, is completing work on the concrete foundations for the Starks building, which will go up at the corner of Fourth and Walnut streets, Louisville. The same company recently finished the excavation, which is one of the largest pieces of work of the kind ever done in Louisville. The hole in the ground was 40 feet deep and 75 feet wide, being 145 feet in length. W. F. Barth, secretary of the Henry Bickel Company, is again at work, after a short vacation spent in Indianapolis.

H. H. Snyder, president of the company of that name, with offices in the Todd building, has been elected to the Rotary Club. That organization, including but one member of each branch of business, chose Mr. Snyder as the representative of the concrete workers of the Kentucky metropolis. The distinction is one well worth having, the Rotary Club in Louisville now containing the cream of the business world, men who have made good in their various lines. Mr. Snyder was welcomed to the Rotarian ranks at the recent Monday luncheon, which is a feature of Rotary meetings.

The Meacham Contracting Company has been awarded a contract for the erection of a concrete and steel bridge over Mill creek in Davidson county, Tenn. The structure will be 150 feet in length. The contract will be handled by the Nashville, Tenn., branch of the company, which at present is already doing extensive work along the same lines. The Meacham Contracting Company is building the concrete masonry on a new Louisville & Nashville line, running out of Nashville, while contracts for concrete at Elkton, Madisonville and Crofton, Ky., have been added to the list.

West, Purdom & Company, is the style of a new firm of concrete workers established at Murray, Ky. W. M. West and W. H. Purdom are interested in the firm, while Robert Marshall has been engaged as manager.

A contract involving the construction of a concrete pavement and curb and gutter in front of the Gilcher House, Danville, Ky., has been awarded to the Dillehay Brick Company, of that city.

Silos are becoming an important feature of the business of Kentucky concrete men, agriculturists only recently realizing the value of silos. While wood is sometimes used in their construction, concrete is the usual material for the floor, and in most cases the entire silo is of concrete. The silo is becoming first aid to dairy farmers and its use is increasing rapidly through the entire State.

The completion of the magnificent $2,000,000 bridge across the Ohio river at Louisville, just reended by the American Bridge Company, calls renewed attention to the splendid concrete piers erected by the Foster-Creighton-Gould Company, of Nashville, Tenn. Eight piers were erected by the Nashville concern. The finishing touches are now being put on the steel and concrete link between Kentucky and Indiana and traffic will begin November 28.

Adams & Sullivan, a local contracting firm, have been awarded a contract for the construction of a bridge over Mulberry river, Ala., for the Louisville & Nashville railroad. The bridge will be of concrete, requiring the use of 5,000 yards of material. A similar one is to go up across Walley creek, the same firm having been given the contract, which calls for a 2,000-yard bridge of concrete.

The National Concrete Construction Company, of Louisville, has begun work on a new Louisville & Nashville roundhouse to go up at De Coursey, Ala., the Louisville & Nashville railroad having let the contract. The National will do the concrete work on the new Waverley Hill Sanatorium, near Louisville. The same company, which secured the contract for the concrete work on the Vendome Hotel, Evansville, Ind., has been forced to drop operations on the five-story structure because of the impossibility of securing steel. Mills are overcrowded and are far behind on their orders, it is reported.

David Campbell, representing the Harris Engineering Company, of St. Louis, has left for Lexington, Ky., where he will attend State University, and the Louisville agency is now in the hands of Capt. J. C. Baird. The Harris Engineering Company specialized on concrete underground conduits. Capt. Baird is connected with the Cave Hill Cemetery Company.

A new concrete dam is to be built at the old Coulthard & Honey Mill, near Paris, Ky., replacing a frame dam which was built in 1775. Alvin Hicks, of Paris, Ky., has secured the general contract for the work. The new dam will be 220 feet long, with a ten-foot abutment at each end.

The Board of Public Works of Louisville is considering the advisability of erecting retaining walls along Beargrass creek to prevent overflows. About $250,000 would be required for the work. If decided on, the retaining walls will be built instead of the lateral sewers at first proposed. John D. Wakefield is chairman of the Board.

The Louisville Board of Park Commissioners has rejected bids submitted for the construction of a concrete bridge in Cherokee Park, on the grounds that all were too high. The bids ranged between $5,700 and $6,700. The Board will advertise for competitive plans, specifications and bids from contractors in the near future.

The City Commissioners of Newport, Ky., have adopted a building code, which has been under consideration for the past year, and all future construction work must conform to the provisions of the code. Various contractor bodies and others interested will approve the code, it is understood.

The Louisville Board of Public Works has named and will shortly place two surveying crews on the new sewer work being carried on with the funds acquired through the sale of the city's gas stock. Roy Burks is in charge. The first letting will be November 29.

The National Contract Company has begun work on a cofferdam for the lock at dam No. 10, Ohio River, Steubenville, O. The top of the cofferdam will be about eighteen feet out of the water at low stage, and will extend 370 feet from the Ohio shore, leaving 900 feet of river on a nine-foot stage.

Joseph & Joseph, Louisville architects, are completing plans for the new National Theater, at Fifth and Walnut streets, Louisville, which will be of reinforced concrete construction, and bids will be awarded for the work in the near future. The work of removing the old material will begin at once, bids having been prepared for that phase of the work.

SAN FRANCISCO CONCRETE NEWS

San Francisco, Cal., Nov. 16.—At the last meeting of the Harbor Commission in this city plans were approved for two new sections of concrete seawall, aggregating a length of 1,760 feet, and bids will be called for at once.

The Concrete Pipe & Construction Company, of Porterville, Cal., has just taken a contract for over six miles of concrete irrigation pipe for an orange plantation project.

Additional contracts for state highway work let about October 20, amounted to 73.47 miles, including sections in eight counties. Most of the construction is to be oiled concrete, with some asphalt on concrete base.

E. R. Gayler, engineer in charge of the drydock work at Pearl Harbor, T. H., says: "The construction of the drydock has been carried on under very great difficulty, but good progress has been made. The bottom conditions were found to be quite difficult, requiring the construction of a pile foundation, which has now been completed. Further difficulty was encountered in laying the concrete of the drydock under water, made necessary by the porous nature of the subfoundation; but these difficulties have now been overcome and the work is proceeding rapidly. The drydock when completed will be large enough to drydock any vessel now afloat. It will accommodate any ship which can pass through the Panama canal locks, and is not exceeded in size by any drydock in the world."

CONCRETE IN ILLINOIS

Springfield, Ill., Nov. 20.—The Illinois Valley Cement Products Company, of Farmington, did a good business in cement posts and cement blocks from their booth at the National Vehicle and Implement Dealers' Show, at Peoria.

Joseph Klein, of Freeburg, was awarded the contract for the construction of four concrete bridges in Godfrey township, Madison county, for $4,470.

The tallest concrete silo in Illinois has been built near Sycamore by William Warford, of Sycamore. The silo itself is sixty feet high and on top of that is a water tank twelve feet high.

The contract for a new concrete bridge near Milan was awarded to the Cement Products Company, of Silvis.

W. M. Allen Sons & Company, of Peoria, are building six one-story buildings of brick, concrete and steel for the Illinois Paper Company, at Averyville, a suburb of the city. The contract represents $100,000.

The Laclede Steel Company, which recently built a new plant at Madison, is employing about 200 men in the manufacture of iron for re-inforcing concrete.

The Decatur Bridge Company, of Decatur, was awarded the contract for a 100-foot concrete and steel approach over the Spoon river at London Mills, for $2,385.

The Illinois State Highway Commission will supervise the construction of a 224-foot concrete bridge across the Vermilion river near Deer Park, to cost about $10,000, for which the contract will be let in a few months.

Otto Walters, of DeKalb, has sold his concrete roofing tile business to Ellis Moore, of Chicago.

Frank Ramsey, a concrete contractor of Edgewood, and Miss Gertrude May Peck, of that city, were recently married.

The Fox River Flexotile and Cement Contractors, of Aurora, which recently incorporated with capital stock of $5,000, will be the distributors in the Fox River valley and in Will county for Flexotile flooring, which is made at Rockford. The new St. Joseph's Hospital and the Dillenburg building were among the big contracts captured.

Lewis Weaver has opened a tile and cement products factory at Moriah.

CONCRETE IN IOWA

Des Moines, Iowa, Nov. 20.—The Hart-Parr factory at Charles City will try monolithic concrete houses for its employees.

The Miller-Manney Cement Products Company, of Marshalltown, will construct a new plant. The work will begin with one building 45x91 feet of cement blocks, this winter, and next spring one or more warehouses for material and finish products will be erected. The company has leased a tract of land from the Minneapolis & St. Louis Railway Company and a switch 900 feet long to handle its products and supplies will be constructed.

The extension department of Iowa State College has put a cement expert into the field to lecture upon the use of cement in farm buildings. H. E. Gaden will devote December, January and February to lecturing before any group of farmers at short courses, farmers institutes or agricultural club meetings, without any expense to the local organizations. His subjects include "The Selection of Concreting Materials," "Proper Mixtures and Proportions of Concrete," "Concrete on the Modern Farm," "Concrete Farm Buildings," "Concrete Silos."

Councilmen of Marshalltown made a trip the latter part of October to Ann Arbor and Saginaw, Mich., to inspect Dolarway paving.

Fire October 29 at Sioux City did $13,000 damage to the plant of the Sioux City Cement Machinery Company.

PHILADELPHIA CEMENT NEWS

Philadelphia, Nov. 19.—A plan of reorganization of the American Cement Company and its subsidiary companies has been prepared by the general reorganization committee and submitted to all holders of securities, and deposits of securities are now being received by the Girard Trust Company, Philadelphia. Charles J. Rhoads, chairman of the general reorganization committee, has requested all holders of securities of the American Cement Company, Reliance Cement Company and Norfolk Portland Cement Corporation to send in their names and addresses so that copies of the plan of agreement of reorganization may be mailed to them.

The Allentown Portland Cement Company's plant at Evansville, Pa., in charge of A. E. Douglass, is enjoying a very brisk season, with the assurance that between 140 and 160 men will have steady employment all winter. The present output is 80,000 barrels a month. Shipments are averaging thirty carloads a day. Orders are coming in steadily and the plant has never had a more vigorous fall season. The prospects for 1913 are extremely good.

At the annual meeting of the Bath Portland Cement Company, in this city, Samuel Clark, of Newark, N. J., was re-elected president; B. F. Stradley, first vice-president and treasurer; Louis Raffeto, of Philadelphia, second vice-president, and Fred B. Franks, secretary and general manager. The plant has been very busy during the year producing more than a million barrels of cement.

President John W. Eckert, of the American Cement Company, has ordered a large force of men to begin making repairs on the company's mills at Egypt, Pa., with the expectation of resuming operations immediately after the final meeting on reorganization proceedings.

CEMENT

Association of American Portland Cement Manufacturers

Meets Semi-Annually.

OFFICERS

Edward M. Hagar ..... President
W. S. Mallory ..... Vice-President
John B. Lober ..... Treasurer
Percy H. Wilson ..... Secretary

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Bethune Duffield,
W. S. Mallory,
Edward M. Hagar,
R. W. Lesley,
Frank E. Tyler,
Conrad Miller,
Conrad Miller,

ROUND ABOUT LA SALLE.

The country surrounding La Salle county, Illinois, is peculiarly adapted to the manufacture of Portland cement, including as it does such facilities as easily produced materials, a nearby fuel supply, and other similar advantages. And in this district three of the well-known cement companies operate their mills.

The Chicago Portland Cement Company is located at Oglesby, Illinois, where they excavate their raw materials from the side of a high ridge, almost horizontal in its workings, thereby greatly facilitating the removal of the materials. After the drilling and blasting, the lime rock and shale are excavated with large steam shovels, which load the rock into waiting cars. The materials are than weighed and conveyed in definite proportions to the rock crusher. A very interesting feature of the manufacture is the aerial tramway, which conveys the crushed material across the Vermilion River to the mill. The buckets, which are filled automatically from the storage bins, are conveyed at regular intervals on the tramway, which has a daily capacity of 2,000 tons.

Considerable importance is directed to the drying of the raw mixed materials, as there must be no moisture in the cement mixture. The rotary dryers are steel cylinders slightly elevated at one side and rotate on their bearings. Heat is applied at the lower end, escaping through the upper end, and the mixed materials pass through the cylinder.

In grinding the mixture to a finer powder the dry materials are ground in ball mills. The steel balls are of various sizes and during the rotating of the mills crush the rock mixture. After passing through numerous sieves, the mixture is conveyed to the tube mills for the final grinding. Flint pebbles are used in these circular mills and here the mixture is ground to a very fine powder.

The kilns used to reduce the raw mix to a "clinker" are long cylinders of steel, slightly elevated at one end, and operate similar to the rotary dryers. The cement mixture is poured into the upper end and gradually runs out the lower end, at which end powdered coal is injected, burning with a very high temperature (about 3000° Fahrenheit). In this kiln the water and carbon dioxide from the mixture are driven off, and the lime, silica, alumina and iron ore are chemically united, forming the "clinker." This "clinker" is then cooled, and after the requisite amount of gypsum has been added is conveyed to the crushing rolls. These crushers, known as Kent mills, are specially constructed centrifugal grinders, which partially pulverize the "clinker," and this powder is then conveyed to the tube mills for the final grinding, each mill containing a charge of flint pebbles. The cement is then carried to the sacking department, where various automatic methods of filling the bags are employed, and the finished product is then ready for shipment.

The general arrangement and method of manufacture of the two other cement mills located in this vicinity are somewhat similar to the Chicago company's plant, but certain features of particular interest which appear are well worth noting.

The excavation of the raw materials at the plant of the Marquette Cement Mfg. Company is one of the most interesting and remarkable sights of cement manufacture. The rock and shale are mined from the side of a high ridge, and the shafts penetrate into the side of this ridge for over a mile, and at a depth in some locations of over 90 feet. The most wonderful feature of the mine, both for its uniqueness and natural beauty, is the wall of solid rock, through which the passages have been blasted, no supports being necessary to hold up the roof. Shafts have been opened in all directions through this property and the materials are carried by electrically propelled cars, which operate in all parts of the mine. The actual excavating is done similar to the open quarry process with the use of drills and dynamite and the steam tractor shovels. However, the most expert knowledge of the blasting possibilities and the amount and quality of the rock in each location are necessary to obviate any possibility of accident or mistake. The various details of the operations in this mine are extremely interesting and instructive, and coupled with the natural wonders of the mine, afford a very profitable inspection.

The German-American Cement Company remove their rock from an open quarry, where it is easily excavated and from there passed through the regular processes of cement manufacture. The compactness and close proximity of the various processes are particular features of this mill.

The labor saving machinery and expense reducing devices in these great cement mills exemplify the progress of the day; the use of electricity, dynamos, steam engines, conveying machinery, belting cables, locomotives, cars, crushers, screens, air drills, dynamite, steam shovels, gears, tube mills, Kent mills, kilns, coal dust, bags, bag tyers and fillers, etc., etc., all illustrate the progressive principles of the American cement manufacturers. The process of manufacture is an intricate one and careful tests are made by all cement mills at various points in the line of manufacture to insure a constant and perfect grade of cement. The essential elements of manufacture must be executed perfectly and the advanced methods as used in the cement mills of today insure to the consumer the use of the product with satisfactory results.

BULK SHIPMENTS OF CEMENT.

The Universal Portland Cement Company has been conducting a campaign in favor of bulk shipments of cement as a solution of the bag problem. We quote from a leaflet sent out by the company the following:

REASONS WHY BULK CEMENT SHOULD BE USED.

IT WILL COST LESS TO FINANCE THE JOB.

The initial outlay for bulk cement will be 40c per barrel less than for cement in cloth sacks and 10c less than for cement in paper. Every cloth sack on a job, or in transit to or from a job, whether filled or empty, represents an investment of 10 cents. Every paper bag used represents a fixed loss of 2½ cents.

IT WILL GET TO YOU IN BETTER SHAPE.

There will be no fuss or argument over sacks received in torn condition. If rain should get into the car, there will only be one or two lumps of set cement to be lifted out; there will be no partially damaged sacks to handle and no lumps of set cement to be pried out of sacks.

IT WILL COST LESS FOR LABOR.

No matter how cement is bought, it is bulk cement that goes into the mixer. Therefore, labor employed in emptying sacks, that is, reconverting sacked cement into bulk cement, is wasted labor. So is the labor that is spent in shaking, counting, bundling, shipping and keeping track of empty sacks, for there is no real reason why there should be any sacks on the job.

IT WILL COST LESS FOR MATERIAL.

In computing the total cost of cement used on the job, the various sack losses and expenses must be added to the invoice price of the material—therefore, eliminate this loss and expense and reduce the cost of the cement. If sacks are used some of them must surely be destroyed, through carelessness, wilful abuse and natural wear and tear, and some of them will probably be stolen. All these destroyed and stolen sacks cost money; why not get along without sacks?

IT WILL COST LESS IN THE WAY OF MISCELLANEOUS EXPENSES.

There will be no freight to pay on returned sacks. The sack shed can be used for storing something that is really needed on the job—or need not be built at all. The team can be doing something worth while instead of hauling sacks to the depot. The bookkeeper and clerks won't need to be keeping tab on a lot of sacks which run into big money and don't do the job any good. After they have put in part of the time formerly devoted to this kind of work in figuring the profits resulting from the use of bulk cement, they can spend the rest of the time in figuring further ways of cutting costs and increasing profits.

IT WILL IMPROVE THE DISCIPLINE ON THE JOB.

Cement sacks are very attractive to the men. Split open, they make good aprons. If a man is working in mud, a couple of sacks wrapped around his feet will protect his shoes. In dainy weather a sack will keep his shoulders dry. Sacks are handy as tool bags and for carrying nails, rivets, etc. Lots of them are stolen. All these sacks cost the user of the cement 10c each, and, furthermore, if the men are allowed to get into the habit of misappropriating one kind of property they won't stop there. Soon, belting will be cut up for hand shields, tools will be misused and other valuable property made away with.

NEW YORK CEMENT NEWS.

New York, Nov. 19.—Manufacturers of cement here report that the demand has been brisk during the past month, and from present indications these conditions will be maintained during the balance of the year. While the subways are not in a position to use cement yet, other big projects such as the deep water pressure tube, the New York railroad bridge, the Pennsylvania railroad at Jamaica, L. I., are consuming large quantities.

The general improvement in business throughout the country has had a beneficial effect on the cement industry, largely because of the fact that during the past two years the price war, the survival of the fittest, failures, shutdowns and forced curtailment reduced stocks to a minimum. As the situation stands now the demand throughout the world is unusually good. Both England and Germany are short of cement and are obtaining considerably higher prices. The car shortage is increasing the difficulties, and the advance of 30 cents per barrel in the past few months seems to be most willingly paid for new business, the main desire being to get cement in quickly to complete construction while the weather makes working possible. Old contracts, however, still keep down the price, but are mostly expiring. It is generally believed that prices, on account of the low stocks and the necessity for reducing deficits, will be maintained throughout the winter and probably be advanced 10 cents next spring.

The Canadian Government on November 1 again placed the tariff on cement and cement bags, after having remitted half of the amount of the customs duties on cement and cement bags since June 12, 1912. During June, July, August and September the importation into Canada of cement increased greatly, reaching the total of 793,656 barrels. During the corresponding time in 1911 there were 327,439 barrels imported. The increased amount was largely consumed in the western provinces. It is estimated that they received 302,450 barrels during the four months mentioned of 1912, as compared with 3,191 barrels during the same time last year. It is claimed that the consumption of cement in Canada in 1912 will amount to about 8,000,000 barrels.

A representative of the Lehigh Cement Company reported the demand for cement was active during the past month. The volume of business has continued steady and quite a little business has been booked at the new figures, 90 cents, in bulk at mill. The prospects for the balance of the year are very good, as outdoor work will continue until the cold weather sets in.

George A. Molitor, of the Northampton Cement Company, stated: "The amount of cement sold was quite heavy last month, but the greater bulk of it was delivered on old contracts which were made some time ago at a much lower figure than the present quotation of 90 cents at mill. A few small orders were closed at the new figure. However, all new business for delivery next year is being closed at 90 cents. The position of the cement market has showed remarkable progress during the past six months and the prospects for next spring were never better."

W. P. Corbett, secretary of the Alsen's Portland Cement Company, made the following remarks concerning the local cement market: "The demand for cement continued active during the past month and we were kept busy. There has been no let-up in the call which began in the early part of September. Heavy construction work is going on in this section which will consume a considerable amount of cement. Cement is still being delivered on contracts made at the old figures, which were actually below cost, but these are being rapidly filled. The local situation has improved considerably and there is very little stock in bins. The expectations are very bright for business and higher prices will probably prevail next year."

Samuel Wells, of the McCormack Wareproof Cement Company, said: "Business has been going steadily during the month and car deliveries will keep us busy for the balance of the year. We hear from all sides that business is good and everybody seems to be busy of late. From present indications business for next year is very promising. Many manufacturers claim that 1913 will be a banner year in all trades."

LOUISVILLE CEMENT NEWS

Louisville, Nov. 19.—With the local cement situation altogether satisfactory, as far as demand is concerned, other factors are not so gratifying. The car shortage, which, it was hoped, would have been dissipated by the opening of November, has continued to make itself felt in Louisville cement circles, and instead of showing any indications of improving, the situation is growing worse. One plant near Louisville may be closed down in the near future, or, at least, forced to curtail its working hours unless some relief is extended to coal operators in the eastern section of Kentucky. While coal men have tremendous supplies mined and ready for shipment, it is reported to be utterly impossible to

secure any great number of coal cars. Louisville cement plants, using three or four cars of coal daily in each case, are doing the best possible under the unsatisfactory conditions, but there is much room for improvement as far as this feature is concerned.

Not only is the shortage hurting the plants in that they may be forced to slacken up in one of their very busiest seasons, but it also is preventing heavy shipments to points which are demanding cement at once and in quantities. Louisville cement men are shipping as much as possible to various places where building operations are going on, but are working on a hand-to-mouth basis, which is far from being satisfactory to anyone concerned. Some relief has been felt recently, but there is still plenty of room for improvement.

The market is satisfactory to Louisville members of the trade, being rather stiff, and showing no signs of a slump. Stocks on hand are rather light, and with demand the heaviest of the past year, there is little danger that a decrease in quotations will appear. It is possible that some manufacturers, with heavy stocks on hand, will endeavor to stimulate trade by price-cutting, but business is so generally good that this step is merely possible and not by any means likely. Good weather has played an important part in the heavy use of cement all over the country. So long as present weather conditions continue, business will be maintained at its present high stage. As long as the cement people keep a stiff upper lip, therefore, conditions are apt to be very nearly ideal, the lack of transportation facilities being the only marring feature.

The Kosmos Portland Cement Company, of Louisville, is scattering its fire as much as possible, shipping to as many points as it can in an attempt to keep all hands satisfied until more cars can be secured. The company is now providing cement for the new Young Men's Christian Association building in Louisville, which will consume about 10,000 barrels. The Starks building in the Kentucky metropolis will exceed that figure, using about 15,000. The Gibson Hotel in Cincinnati will use about 20,000 barrels, while the same number will be taken by the new Louisville & Nashville bridge in course of construction at Nashville, Tenn. The new Imperial Tobacco Company's warehouse at Henderson, Ky., is a contract which will be filled in part in the near future, while the Kosmos Portland Cement Company is also providing cement for the Vendome Hotel annex at Evansville, Ind. A job which has been overshadowed by others of more importance and value, but one of which the company is rather proud, nevertheless, is that calling for the delivery of cement for the new governor's mansion at Frankfort, Ky. The new residence will be completed by springtime, when the chief executive will abandon the old place.

Few new jobs of extreme importance have been registered during the past month with J. B. Speed & Co., though old work has been heavy enough to keep the concern active. The shortage of cars is still having a bad effect, retarding shipments, though the company is doing remarkably well under adverse conditions. Henry S. Gray, secretary of the company, has been on a short business trip, which, it is hoped, will have a favorable effect as far as securing cars in the near future is concerned.

The plant of the Kosmos Portland Cement Company at Kosmosdale, Ky., is to be connected with the Louisville, Henderson & St. Louis railroad in the near future, the Fitch Construction Company having already begun work on the connecting spur. The line will enable the cement company to bring in material from its quarries in Meade county by rail. Water transportation is now being used exclusively.

State Engineer E. H. Marks of Kentucky has advocated the cementing of the two reservoir basins at Newport, Ky., stating that only that action will prevent a probable epidemic of typhoid fever. Commissioner Bauer has been appointed to investigate the proposition at once. The cementing of the two big basins would involve an expenditure of $42,000, according to a recent estimate.

Newport, Ky., is to have cement sidewalks, notices having been served on property owners on York street, between Third and Ninth, and on Monmouth street, between Third and the railroad crossing, to that effect. Uniform walks will be made all over the city in the near future, the city commissioners having recently decided on that step. About 135 property owners will bear the expense of the new cement walks.

CHICAGO CEMENT NEWS

Chicago, Ill., Nov. 21.—Manufacturers of cement speak of the conditions in the trade this month as not only eminently satisfactory, but better than they have been many years in the past. The consumption of cement throughout the country this year has been phenomenal, and with the immense bumper crop that has been harvested this year, there is little question but what consumption of cement the coming year will be even greater. Mills throughout the country are going into winter practically without any stock, and with a great demand indicated next spring it is stated and felt that prices will rule approximately near to what they have been the latter part of 1912, with practically no break, as existed the forepart of this year. This prospective great demand will unquestionably protect both dealer and manufacturer alike against the severe competition that existed last spring. In consequence of these conditions, it is believed prices will fluctuate but little and a little nearer on a level during the next twelve months than has been experienced for some time in the past. Some relief has been felt this month in the car shortage situation, probably for the reason that not as many cars were needed in the shipment of cement as in October. The demand continues active as well as shipments which will continue to the close of the season—which will close when everything is frozen up. Prices remain high with market emphatically strong.

Harold M. Scott, western sales manager of the Lehigh Portland Cement Company, stated: "Consumption of cement this year has been phenomenal, demand has been great all through the summer and fall and continues so this month. Our shipments will continue heavy to the close of the season, and are extremely busy supplying the trade with our cement. The car shortage is somewhat relieved and we are not finding as much trouble in getting cars as we did in October. Prices are strong, with every indication that they will continue so with the opening of the season next spring, as mills are going into winter with very low stocks and a heavier consumption of cement during the coming year than we have experienced the last six months. Conditions are excellent and prospects brighter than they have been in years."

E. L. Cox, general sales agent of the German-American Portland Cement Works, stated: "We are going into winter practically without any stock of cement. There is every reason to believe that prices will remain as high next year as they have ruled the last six months. Our shipments are heavy and the demand is as active this month as it has been during the busy period of last summer. There is no change in the splendid conditions the cement trade has experienced since July. The season generally closes about December 15th, but this year it will be a month later on account of the probable good weather conditions. The car shortage is somewhat relieved and we are still shipping to country towns. Prices are not only firm but strong."

Gold Williams, of the Marquette Cement Manufacturing Company, said: "Last year mills at this time of the year had their bins full of cement, with no special demand in sight for the coming spring. This year mills go into winter with empty bins, and with prospects of a greater demand for cement the coming spring than we have had for the last six months. The demand next year will undoubtedly be so heavy that it unquestionably will protect the dealer and manufacturer alike against the severe competition that existed the forepart of this year. There is every reason to believe that prices will not fluctuate so much as they have this year, and will be nearer on a level approximately close to the prices which ruled for cement the last six months. With regard to the results of the presidential election and the change of administration next March, no fear or anxiety is felt, and the fact that we are now spending two hundred thousand dollars immediately after the election, increasing our facilities in both the raw and finished ends, speaks for itself. Our shipments this month have been heavier than we expected. The car situation is becoming relieved to some extent, and we are looking for great prosperity next year, which will increase consumption of cement materially over that of the year now closing."

J. U. C. McDaniel, traffic manager of the Chicago Portland Cement Company, said: "Our shipments are still heavy and will continue so until everything freezes up. Then the season will close for us, and not sooner. Prices are firm and the market strong. Like other mills, our stock of cement is low which we carry over for next spring. Prospects for next year are exceedingly bright, and it is the general opinion that prices will not change when the season opens up next spring."

B. F. Affleck, general sales manager of the Universal Portland Cement Company, said: "Business is quieting down, which is natural because of the season now practically being over. Mills are all going into winter quarters with very small stocks on hand. The situation of the car shortage is much relieved, partly due to our needing at the present time less cars for shipments than we did in October. Prices are firm, with a very strong market. Indications point to an excellent trade next year, and prices, it is believed, will approximately remain near the prices of this year and decidedly higher than in 1911. Conditions are excellent, in fact were never better than at this time."

SAN FRANCISCO CEMENT NEWS

San Francisco, Cal., Nov. 16.—The cement mills are all having some difficulty in getting cars for current deliveries, but the movement is less active than a month ago. The general trade is keeping up well, but shipment has been stopped on some large jobs. Some cement is still being shipped north, going as far as British Columbia.

Freight rates on cement to San Joaquin valley points from northern and southern California may be reduced 10 to 20 per cent as a result of a recent decision of the State Railway Commission, in which such a reduction was recommended. The case in hand, however, did not directly concern rates, the main decision being an order to the Southern Pacific and Santa Fe to grant through routing and joint rates to two branch lines, which connect the main lines with the Cowell Portland Cement Company's plant near Mount Diablo and the Pacific Portland Cement Company's plant near Suisun, Cal.

CEMENT SAVING.

Every contractor who does not confine his operations exclusively to dusty deserts has had his troubles with the rain getting at cement on the job, ready for use. He has tried various makeshifts to protect it in a sort of a way. An iron wheelbarrow turned bottomside up on a small pile of sacks isn't so bad, if there is no particular objection to the cement getting wet on the ground and at the sides. Or, perhaps, a tarpaulin is thrown over the sacks, covering them entirely. This looks like a nice, dry place for the material, and it really is a degree better than leaving the cement absolutely uncovered to the weather, but "ask the man who has tried it," as a happy advertising slogan goes, and information will be forthcoming. It will be to the effect that at every point where the canvas touched a sack, in rainy weather, wetness came through; and while cement and moisture in every form are passionate affinities, it is advisable to keep them quite apart until the man on the job is ready for their union.

A sack of cement, costing the contractor something like 35 cents, needs only the opportunity afforded by inadequate shelter from the rain to set, reverting to all intents and purposes back to the solid rock from which it came. And when this once happens, it is worth just as much as a like quantity of stone or gravel—if you take the trouble to break it up—not to mention the loss of the sack.

"And yet," remarked one of the leading manufacturers in a Portland cement center, after commenting on these facts, "and yet it's the simplest thing in the world to make a satisfactory shelter for the stuff, with a little trouble. The cost of a few sacks of cement lost by water getting to it—three or four dollars, anyway—will pay for a shelter which the little fellow who handles nothing but odd jobs like sidewalks and cellars can afford. At least, he can afford it a good deal easier than he can to drop a few sacks of cement every time it rains.

"Here's a good shelter," he continued, sketching a rough little diagram on his memorandum pad. "In the first place, the cement must be protected from the ground. If you let it lie right on the earth, on a sidewalk, or anywhere else where the surface water can run right into it, the best roof that was ever put on a million-dollar building won't help those bottom sacks. So some two-by-fours should be laid on the ground—the two-inch dimension to the ground—a foot or eighteen inches apart. They should be, of course, long enough to accommodate the size of the pile you want to make, and you can make as many rows or piles as you desire. In each end of each piece you can drive a spike, so that an inch or two is left sticking out. That is for a purpose which I will explain later.

"Then, for the roof, a framework should be made upon which to stretch tight sufficient canvas for the purpose, nailing it fast. Uprights of scantling to cover the pile can quickly be erected, and your canvas roof goes on top of these, which should be made high enough to cover your pile of sacks, with a little clearance, to avoid the trouble I spoke of when the canvas is allowed to touch the cement.

"Now, if you make similar frames for the sides, at least two of them, you'll have a better shelter, of course, but if you make the roof wide enough to give some clearance over the pile, you don't even need to construct sides. Put your roof on your uprights, giving it enough pitch to shed the water, and bind or nail it fast. Tying it on is better, because it can be taken down more readily than if you have nails to wrestle with. Then from the roof, to protect the side of your pile from the drive of a rain storm, bring down sheets of

canvas, attaching them by tacks to the edges of the roof, and tie them to the ends of the spikes driven into your floor scantlings on which the sacks rest, and there you are.

"As I say, the whole thing needn't cost more than three or four dollars. It will cover anywhere from fifty to a hundred sacks, which are as many as the contractor will carry on the average job. It can be put up or taken down in a few minutes, and it will keep cement dry enough for all practical purposes. The pieces of two-by-four used to keep the sacks off the ground can be made short enough, eight or ten feet, to be thrown right in the contractor's wagon, and the framework for the roof can be handled easily. Of course the sides, if no framework is made, will roll or fold up just like any other piece of canvas."

Such a shelter as that described has been used by a number of small contractors around the city where this manufacturer makes his headquarters, with very satisfactory results. Whether one of them invented it, or whether it is his own idea, which he generously passed around, is immaterial. The point is that it does the work, and can be quickly put up or taken down by the man on a small job on which not enough time or material is used to call for the building of a shed for tools and supplies, and yet where the rain may catch and ruin a quantity of cement which no man would care to throw away when a few dollars would save it and prevent similar losses on future jobs.

Another item of which this manufacturer said contractors were amazingly careless is the sacks. Every sack means ten cents to the contractor, and ten cents to the manufacturer. If the contractor takes care of and returns them, he saves ten cents. If he loses or spoils the sack, he must pay ten cents for it; it is that much more on his bill. Fifty sacks mean five dollars, and so on up, the item mounting in size and importance with the size and importance of the job, and yet it would seem that many contractors do not consider it of sufficient importance to pay any attention to whatever.

An instance was observed where on a sidewalk job which had just been completed, the contractor's men had taken all of the sacks which had accumulated as the work progressed, and spread them out carefully over the fresh concrete, in order to protect it from dirt, and, presumably, from such showers as might come up while it was drying!

"Now," said the manufacturer, in speaking of the incident, "that contractor will feel awfully sore when he turns those sacks in and we refuse to take them and give him credit for them. There was a shower or two while those sacks were thus being utilized as tarpaulins on that job, and they naturally got wet, and every contractor ought to know that he should no more let his sacks get wet, if he intends to turn them in, than his cement. They are injured by contact with water, and a very little of it renders them useless as far as we are concerned. The reasons why this is so are very simple, and I see no reason why any contractor should not understand them.

"In the first place, it goes without saying that an empty cement sack contains more or less cement. In other words, you can't empty it absolutely. And when the small residue sticking to the sack all through the inside of it gets wet, it does just what cement, in any quantity, large or small, always does under such circumstances, it sets, and as a consequence the sack is stiff and hard and useless. Water hurts the sack in another way. It is made of a coarse, short cotton fiber—cheaper stuff even than cotton flour sacks—and is filled and stiffened for use by a heavy sizing. When it gets wet the sizing is washed out and this alone would make the sack valueless to us. Yet the contractor would profess an utter inability to understand why we wouldn't give credit for sacks in such a condition.

An essential point to be impressed on the men handling the sacks is that they should be opened by cutting the string by which they are sewed together at the top. If they are slit open at the top with a knife, without cutting the string, the sack is, of course, ruined, and if they are opened at the bottom or at the side by cutting, or in any other way, the same is true.

A negro hand feeding cement into a big mixer was furnished with a knife for the purpose of opening the sacks and his system—he had not been instructed in economy of motions—was observed for a while. He opened the sacks sometimes by cutting the string, if he wasn't in too much of a hurry, but usually he was, and then he went into them any old way. When he had opened a sack and was emptying its contents into the mixer, he laid aside his knife, as he needed both hands for the job, and, as a matter of convenience, in order to have it ready to hand for the next sack, he usually jabbed it into the next sack! And when he turned to open that sack, the most natural thing in the world was for him to simply to seize the projecting knife-handle and slit the sack open by drawing the blade toward him; result, another ruined sack, and ten cents in cash lost to the boss.

The one point which might possibly be mentioned in favor of opening cement sacks in this way, or any way except the right way, is that it takes a second or so longer to do it. The cement man who was pointing out this waste promptly demolished the idea.

"The men who handle the cement are unskilled laborers, and their wages range from fifteen cents an hour or less to twenty cents an hour, at the outside. Suppose it takes fifteen seconds longer to open a sack by cutting the string at the top—which it doesn't—than to get into it any old way that comes handy. There's a fraction of a cent's worth of time lost. I don't know how many sacks a busy negro, or any other hand opening sacks by the cut and slash method could ruin in an hour, but if it's only two, the loss equals the cost of another man on the job!"

That is putting it graphically. If every little waste that eats away at profits in the contracting business, or any other, could be translated into such definite terms, more leaks would be stopped. Of course it is probably true that the great majority of contractors suffer but little in this respect, just as they can afford, on the larger contracts, to care adequately for the cement on the job, by the erection of dry sheds in which to store it; but the man who permits loss in either way is usually the man who can least afford it. And it is unnecessary.

CONCRETE FOUR-STORY MACHINE SHOP

There has recently been completed at Lowell, Mass., a 4-story machine shop built of reinforced concrete with brick curtain walls to be used by the Lamson Consolidated Store Service Co. for manufacturing conveyors, pneumatic tubes, carrier systems, etc. The entire contract was executed by the Aberthaw Construction Co., of Boston, in accordance with plans and specifications prepared by the architects and engineers, Lockwood, Greene & Co., also of Boston.

The exterior of the building is particularly pleasing and is a good example of the excellence of using brick curtain walls in concrete buildings of this type. The building adjoins a plain brick structure and there was a question in the owners' minds as to whether this addition would harmonize with the old plant. The recommendation of the architects for using the construction adopted has more than proven their excellent judgment as the old and new structure harmonize quite well.

This machine shop in 150 by 50 feet in plan, with four stories. Steel sash has been used throughout. Extending down the center of the building on all the floors is a single row of columns spaced 10 feet on centers. The beam and girder type of construction is used. The first and second floors were designed for live loads of 250 lbs. per square foot, while the other floors were figured for 150 lbs. The height from finished floor to finished floor is 12 ft. 4 ins.

A particular feature of the interior construction is the method of attaching the shaft hangers. In place of the ordinary inserts, grooves were cast in the sides of the beams and the hangers clamped to the beams. This construction is absolutely flexible; the hanger can be attached at any desired point along the beam and may be shifted at will to another point, or to any other point should the location of the machinery be altered.

Although this building is a comparatively small structure and the design was as regular as possible, 113 different kinds of forms were required, making a total of about 600 forms in all, using in the neighborhood of 10,000 square feet of stock. In order to reduce the cost of these forms to a minimum the Aberthaw Construction Co. made detailed drawings of the same in their drafting room, as it is their policy to pay thinking men to think, and carpenters to saw boards.

It is interesting to note that this structure was erected in part during the severely cold weather of last winter. The Aberthaw Construction Co., as as usual in their winter work, took great precautions to insure the setting of the concrete before freezing. The aggregates were heated by steam pipes and not only was the water warmed by steam pipe but salt was added, generally in the proportion of about 2 per cent of weight to the amount of cement used, the percentage being varied slightly as the temperature changed. The method of applying the salt was to make a saturated solution in a separate barrel of water, keeping this barrel warm and agitating it by the insertion of a steam pipe near the bottom. Salamanders were used after placing each floor. When the forms for the columns and floors were in position the entire building was surrounded with canvas reaching up and over the wall beams and hanging down below the floor underneath. As many as forty salamanders were used in the area of the building which approximates 6,000 square feet of floor.

The construction plant of the builders was located at the north side of the building. The concrete was mixed and hoisted in a regular Aberthaw hoisting bucket to the point desired, the contractors using their iron hoisting tower. This tower was equipped with boom, which raised the steel and centering to the upper floors. The distributing of the concrete was done with V-shaped Koppell cars, the length of carriage from the mixer to the point where it was placed on the job in question averaging less than 100 feet.

The owners are particularly well satisfied with this building and are hearty in their endorsement of this type of reinforced concrete construction.

DRAIN TILE BULK HEADS.

In developing the low lands for farm purposes—and such lands are now the most valuable—immense sums of money have been spent in tile drainage. Too frequently a valuable tile drain is ruined by leaving the mouth of the tile unprotected. In such case the end tiles wash out; cattle tramp in the ditch; small animals build their nests up the tile; the outlet fills up, and crops drown out. Such a great loss can be prevented by a small outlay of time and money in building a concrete bulkhead or retaining wall to protect the tile outlet.

The straight retaining wall, shown in Figure 1, is a type which is often built where the open ditch begins at the end of the string of tile. However, most tile drains empty through the earthen side bank of the stream. Under these conditions, a better design is a retaining wall consisting of a head and wingwalls as shown in Figure 2.

For building retaining walls, choose a dry time of year when there is little or no water in the open branch. Consider, for instance, a tile emptying into a ditch six inches above stream bottom and three and one-half feet below the level of the ditch bank. Plan the bulkhead with a five-foot length of headwall and two wings three and one-half feet long. Slightly back in the bank, dig the foundation trench twelve inches wide and extend it two feet below the bottom of the open ditch. Turn the trench for the wingwalls at such an angle that the ends of the finished wingwalls will project back into the ditch bank and will be at ground level.

Old lumber will do for the forms. One-inch siding on two by four-inch uprights is good. Space the uprights about two and one-half feet apart. Let the back walls of the forms stand vertical and incline the front walls towards the bank so that the concrete will decrease in thickness from twelve inches at the bottom to six inches at the top. At the proper height to meet the tile drain, set a first class drain tile (at least one size larger than the regular string) in the forms so that its front end will be flush with the outside of the wall after the concrete is placed. Bore four one-inch holes in the front form around the tile and place in them well greased wooden pegs. After the concrete has become hard, the pegs are removed and, by means of cement mortar, bolts are fastened in these holes supporting a grating for keeping out muskrats, skunks, and rabbits.

Mix the concrete one part Portland cement to two and one-half parts sand to five parts crushed rock or one part cement to five parts bank-run gravel. If the trench should contain a little water, mix so much of the concrete dry as will be required to take up the water. Make the remainder mushy wet. For the front of the wall, work a wooden paddle or a straight spade back and forth between the concrete and the forms so as to force back the pebbles and to give a neat mortar finish. At intervals of one foot in height, lay old iron rods in the concrete at the junction of the head and wingwalls. Smooth off the top of the wall with a wooden float and finish with a steel trowel. Remove the forms after one week and fill in earth behind the wall to its top. With bolts, attach an iron grating of a screen of woven wire fencing to keep small animals out of the tile.

For a bulkhead of the dimensions given above, there will be required 2¼ cubic yards of crushed rock, 1⅛ cubic yards of sand and 12 bags of cement. Ten dollars, the cost of the materials, may prevent the drowning out of several acres of growing crops and save the expense of digging up and relaying the tile drain.

FOR THE RETAILER

NATIONAL BUILDERS' SUPPLY ASSOCIATION.

We are able to announce that the annual meeting of the National Builders' Association will be held in New Orleans immediately prior to the time of the Mardi Gras Carnival. This much has been decided upon by the executive committee, and so you may as well get ready to go south this winter. There are a number of good retailers and members of the association at the mouth of the Mississippi, and they have already started getting ready to entertain the large crowd that is expected. The first idea about this winter's meeting was to charter an ocean liner and take a trip to the Panama Canal, holding the meetings on the hurricane deck while en route. This was given up as it was feared that some of the members might not prove seaworthy. The holding of the meeting at New Orleans is considered generally satisfactory, as it will enable retailers everywhere to attend the meeting and at the same time witness the annual carnival which has made New Orleans famous, as something else has done for Milwaukee. The readers of ROCK PRODUCTS will be informed of the association's program as fast as it percolates from the wise heads who are arranging the details.

LOUISVILLE RETAILERS

Louisville, Nov. 19.—With plenty of building work actually going on and other big contracts in sight, the roofing situation is one of the best of late years. While the building permits for the month of October showed a decrease as compared to those for the same period in 1911, the slump has been noticeable to no extent in the roofing trade in this city. Many big jobs of importance are being wound up by local building supply men, while others will demand their whole attention in the near future. Permits for November, if structures now planned develop into realities, will show a handsome increase over those for October. Permits for the entire year of 1912, it is believed, will at least equal those for 1911, which was a splendid year.

Weather conditions in the Kentucky metropolis have been such as to merit only praise. Roofing men have been able to do effective work with favorable weather conditions, and practically all have several crews of men out on repair work. New work also is plentiful and the situation is without a drawback.

Owen Tyler, a well-known member of the supply trade in Louisville, is featuring Monarch metal weather strips, having secured the agency for the entire State of Kentucky. Mr. Tyler, whose officers are on the third floor of the Tyler building, is furthering the publicity campaign in favor of Monarch strips by a window display, and also utilizing the daily papers with good results. "Trying to heat all out-doors?" asks the supply man of the public. "Close the cracks in your windows and make your house heat-tight," he further advises. With wintry blasts probable in the near future, the Louisville public is investing heavily in weather strips. Mr. Tyler has appointed two sub-agents for the new line, both the Capitol Lumber Company, of Frankfort, and E. F. Cockrell, of Lexington, having been given rights in their territory. R. C. Jones is a new man with Mr. Tyler. While Mr. Jones has had little experience in the building trade, he is coming fast and gives promise of developing into a first-class salesman.

The Sam F. Troxell Company has begun work on the new Kentucky & Indiana Terminal Company's bridge, spanning the Ohio river at Thirty-fifth street. While the bridge proper will be ready for traffic by Thanksgiving day, the driveway will not be ready for a couple of months later. The Troxell company has already laid 1,000 feet of the driveway and has 3,000 more to complete the work. Five layers of tar felt are to be laid. This will be concreted, then covered with creosoted wood blocks. The company has four crews of men doing repair work, that feature of the business being altogether satisfactory. The Troxell Company has secured the contracts for the roofing work on the new buildings of the Louisville Traction Company, now going up at Twenty-ninth street and Broadway. Three buildings are to be erected, and about gravel and asphalt will be used for the roof. J. B. Hutchings was the architect for the street railway buildings, which will consist of a paint shop, a repair building and carpenter shop. The buildings proper will be of brick and concrete.

A contract which will call for about 220 squares of roofing to be awarded in the near future is that for the Mercantile building at Fourth street and Broadway. The structure will cover a big site on the northwest corner of that business intersection, being two stories in height. The ground floor will be given over to stores while a big dance hall will occupy the second floor.

L. M. Rice, of the Central Paint & Roofing Company, is now on a business trip through Kentucky in the interests of his company. The Central is doing a big roofing business, while several gangs of men are attending to repair work in and around Louisville.

One of the best known roofing paper salesmen in Louisville has left the retail field, Joseph H. Ingram, of the Louisville Roofing & Supply Company, having affiliated himself with the Whitaker Paper Company. Mr. Ingram is connected with the Louisville office of the Whitaker company, and will have exclusive charge of the roofing paper department. He will cover Louisville and a part of Kentucky for that concern. Mr. Ingram has been in the building supply business for a score of years and at one time was the head of his own company. As an authority on roofing papers, he has few equals in the Bluegrass state, and the Whitaker company may be congratuled on his acquisition.

The Louisville Roofing & Supply Company is now looking for a high-class man to succeed Mr. Ingram. Business with the company has maintained satisfactory proportions, and there is a surplus of work in sight, besides numerous small jobs on hand.

Charges of discrimination has been filed against the Louisville & Nashville, Louisville & Interurban, Chesapeake & Ohio and other railroads, by the Blakemore Grocery Company, of Shelbyville, Ky., which asks for the same rates on roofing and other paper given Louisville competitors. The complainant alleges that it is a jobber of roofings and other lines, but is refused the same rates as other concerns engaged in the same business at other points situated in like manner with reference to such shipments. The State Railroad Commission will hear evidence in the case shortly.

NASHVILLE RETAILERS

Nashville, Tenn., Nov. 19.—Building material firms at Nashville are having a brisk autumn trade in cement, plaster and other articles entering into the building trade. Building is on a moderate scale but several special contracts will be under way between now and spring.

T. L. Herbert & Sons finds business good on cement, plaster, brick, sewer pipe, etc. Tom Herbert, of this firm, recently returned from eastern markets.

On the morning of November 5 the city reservoir of Nashville broke and much damage was done by water. The fissure may be replaced or new arrangement made. Only one-half of the reservoir was rendered useless. W. W. Southgate, city engineer, said that he knew of no reason why the walls should give way under the pressure that was against them, unless it was some hidden defect. The walls had stood for years. The reservoir was on a very high eminence overlooking the city and the burst came at mid-night.

Ludlaw and Peabody, the New York architectural firm who secured the architectural work on the buildings to be erected on the campus of the George Peabody College for Teachers, this city, will open a branch office here under the style of Ludlow, Peabody and Hoffman. The contract for the erection of these several buildings was awarded to the Hedden Construction Co., of New York and Chicago, for $162,000. Foster-Greighton-Gould Co., Nashville, has the contract for the cement foundations.

Architects have been selected to draw plans for ten new buildings for Wards Seminary, a girls' school here. Five of these buildings will be erected right away and the remainder before September, 1913. Host and Gardner, of Nashville, will work on the plans in conjunction with John Kevan Peebles, of Norfolk, Va. The first series of buildings are planned to cost about $250,000.

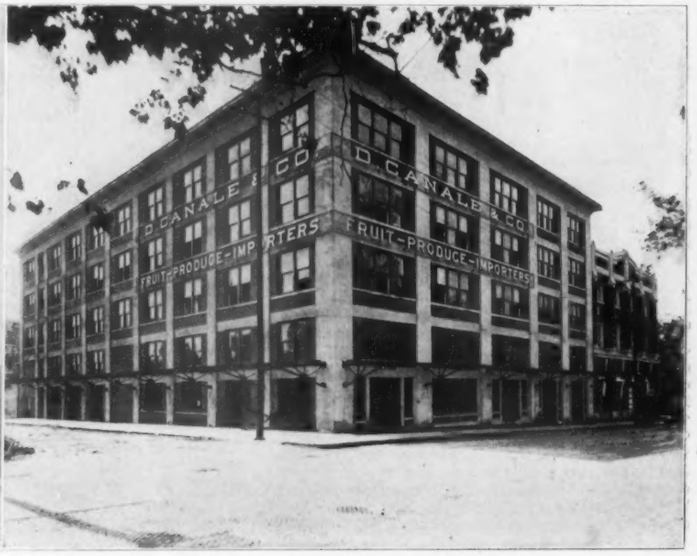
Plans have been completed and work will be started shortly on a $200,000 annex to Hotel Hermitage in Nashville. The plans have been drawn by Architect J. E. R. Carpenter, of New York. The new building will be erected on the lot just south of the present building on Sixth avenue and will front on Capitol boulevard.

The Capitol Construction Co. of Nashville has

WM. R. MOORE & CO.'S BUILDING, MEMPHIS.

OTTO SCHWILL & CO.'S BUILDING, MEMPHIS.

SCOTTISH RITE CATHEDRAL, MEMPHIS



D. CANALE & CO.'S BUILDING, MEMPHIS

had the contract for the cement foundation work on the Calloway Memorial Hospital building.

Col. Thos. S. Hutchison, a well-known Nashville contractor who was elector for state at large on the Roosevelt ticket, has taken passage on a steamship from New York with a view to joining the Greeks in the Balkan war. His work will be to organize Greek infantry. Col. Hutchison has had quite a lot of military experience and was formerly a colonel of the First Tennessee Regiment.

MEMPHIS RETAILERS

The weather continues open at Memphis and contractors are quite busy. Everybody is glad that the election is past and in the South, they are feeling right good.

Within a very few days work will be started on the Chisca hotel job which will be one of the most important of the season. Over fifteen competing contracting firms, C. B. Baker Construction Co. was awarded the contract. The building will cost $337,000. R. B. Snowden and the other owners selected the name Chisca, which is older than Memphis itself, having been the name of an Indian village that stood on the banks of the Mississippi before Memphis. The building will be bounded by Main, Mulberry and Linden Sts. It will have about 400 rooms and will be 8 stories high. Hanker and Cairns, of Memphis, are the architects. There will be considerable cement work about the foundations and approaches of the building, a large amount of terra cotta, fire proofing, steel and brick work.

A. S. Baldwin, chief engineer, and D. J. Brumley, engineer of construction of the Illinois Central passenger station, have been from Chicago the last few days and announced that work will go forward on the new Memphis station at once. The plan is for the ground floor to be completed and be in use before the work is extended to other parts of the building. It will probably be eight stories high, the upper floors used for offices. A temporary station will be constructed for the I. C. R. R. to use until the new station is available. The Frisco and Rock Island will probably use the old Iron Mountain Station while the work is on and later be with the I. C. R. R. The entire cost for elevations and building and rights of way will probably amount to $3,000,000.

The local market on cement is up and demand good. Dealers report the situation a good deal more satisfactory than a few months ago. On lime the situation is about as it has been for some months and the same is true of sand.

CHICAGO RETAILERS

Chicago, Ill., Nov. 20.—Business with builders' supplies firms in this city continues as brisk and as active as it was during the busy summer period. This condition applies to every yard handling building material in the city. Building operations are exceptionally active, especially so in the outlying districts. In every one of these outlying districts many foundations are being put in for small residences and flats in time to have them finished before frost sets in. Prices for building material are fair and much better, especially for cement, than they were two or three months ago. Labor, however, is scarce, and complaints are profit caused by the greater cost of handling ma- heard that it costs more to handle material than it did the forepart of the year and leaves too small a margin of profit for handling the large volume of trade dealers have been handling. Few complaints are heard from dealers concerning the shortage of cars, and they have had less trouble in getting material this month, and have been amply able to supply the large demand made upon them during last summer and this fall. With these exceptions, conditions in the trade are excellent, and it is generally believed that the phenomenal activity in building circles of this year will not only be duplicated in 1913, but exceed the activity of last summer and this fall.

Wisconsin Lime & Cement Company is exceedingly busy this month, finding the demand for builders' supplies as great practically as during the busy summer period, in all of its yards, distributed in different parts of the city. The volume of trade during the entire season has been greater than previous years, and the only unfavorable comment made on present conditions is that it costs too much to handle this volume of trade to receive a reasonable margin of profit.

The Knickerbocker Ice Company reports conditions in the builders' supply business excellent. Its thirty and more yards, located in different sections of the city, have all the business they can handle, finding no letup in the great activity in trade which prevailed during summer and early fall. Prices are reported better than they have been and conditions generally are considered excellent.

Geo. W. DeSmet, one of the prominent dealers in this city in portland cement, structural waterproofing compounds, etc., with offices on the sixth floor of the Chamber of Commerce Building, stated that business was as active this month as it had been during the summer and early fall. Shipments continue heavy and prices on materials are good. Conditions are excellent, and when the season closes next month it will have proven to have been one of the best we have experienced in many years.

Tuthill Building Material Company, 131 West Sixty-third street, reports that it finds no letup to the busy times it has experienced in the past month. There is a general demand for rushing material to jobs to be finished before inclement weather sets in, and all of its teams are busily employed hauling material to jobs in this section of the city. Building operations continue active, many foundations being put in for small residences and flats. Indications are that there will be brisk business all winter, weather permitting.

Walter L. Woods, president of the Standard Material Company, at Sixty-sixth street and Lowe avenue, said: "We continue to be very busy this month. There practically is no letup to the activity in building circles of last summer. Many foundations for buildings in this territory are put in and we are furnishing the material for them before frost sets in. There will be no closed season for us, weather permitting. Just now we are more than usually busy on account of furnishing the material for the foundations of the Normal School building at Sixty-eighth street and Stewart avenue. Conditions in the trade were never better, not taking into consideration the low margin of terial, and everything looks very bright."

Geo. T. Carpenter, one of the live dealers in sewer builders' supplies at Taylor and Forty-first avenue, said: "Business is fine. I am more busy than I was for the past two months. Everything is rushing. Activity in building circles if anything seems to be increasing. Conditions were never better and the fact is I am too busy to talk and give any more details."

Alfred Frerk, of Henry Frerk Sons, 3133 Belmont avenue, said: "Business is slowing down some as the close of the season is approaching, and we do not expect to do much after the first or second week in December. There are many small residences going up in this territory and many foundations are being put in and will be finished before frost sets in. Everything in the trade is in fine shape, with the exception that we do not get the margin of profit to which we are entitled."

H. Diestel, manager of Astrid S. Rosing, 1128 Cornelia street, stated: "We are rushed to the limit to fill orders to finish jobs before the season closes. Collections are better than they have been for the past three months. A great many foundations are put in in this territory, indicating much building during the winter, weather permitting, and at the opening of the season next spring. Everything looks bright, conditions are excellent, and the only thing any complaint can be made of is too small a profit for handling the material."

Arthur Druecker, of N. J. Dreucker & Co., 2634 North Artesian avenue, said: "Business has slackened materially this month. We do not employ the help we did during September and October. There are quite a number of foundations put in in this territory, but we do not believe that prospects are very bright for the future."

J. L. Mortlock, manager of the Waukesha Lime & Stone Company, at Devon avenue and Sheridan road, said: "Business is very brisk and we have been as busy and more so this month than any time during last summer. Things look very good for the balance of this season, which is about closing."

Paul E. Lambe, of Koch & Lambe, 4601 Armitage avenue, said: "Things are very fair. We get all the cement now that we want, not being bothered as previously with shortage of cars. We have not been as busy this month, on account of being interfered with in this territory with paving of streets and extension of carlines, which has partially blocked many of the thoroughfares and made it extremely difficult for us to haul material to jobs. This territory in which we are comprises the towns of Cragin and Hermosa, containing large tracts of vacant land. The improvements now in progress will give great impetus to building, and it is reasonable to believe that these vacant tracts will be filled with residences and flat buildings in the course of the next two or three years. Volume of trade this month is as large as we expected, and conditions in every way are satisfactory with the exception that it costs the dealer too much to handle material at the present prices, not leaving a sufficient margin of profit for the investment and risks in the business."

Templeton Lime Company, at Grand and Homan avenues, finds business this month not as brisk as

FOR BETTER SERVICE

EFFECTIVE NOVEMBER 18, 1912

the General Offices of the Company will be located at HAGERSTOWN, MD., from which point the Executive and Sales Departments will be in closer touch with our plants, situated at Security, Md., and Berkeley, W. Va.

Baltimore District offices will be maintained at 807-809 Equitable Building.

Security Cement & Lime Co.

Hagerstown

Dealers Visiting the Sixth Annual Chicago Cement Show

to be held in the Coliseum, Chicago, January 16-23, 1913, will again find **"Chicago AA" Portland Cement** much in evidence.

Our Model Farm in concrete will be replaced at the coming event, by a **Concrete Pergola,** of artistic design, and concrete products, including sun-dial, lighting standards, tables, benches, urns, pedestals, etc., all made with

"Chicago AA" Portland Cement

You are cordially invited to visit our booth—
SPACES 89 and 98 MAIN AISLE

CHICAGO PORTLAND CEMENT CO., CHICAGO, ILL.
J. U. C. McDANIEL, Sales Mgr.

ST. LOUIS PORTLAND CEMENT WORKS. RED RING ST. LOUIS. BRAND

SALES OFFICE:
Liggett Bldg., St. Louis

THE

Standard Brands

OF

PORTLAND CEMENT

Lightest in Color
Highest Tensile Strength

ALWAYS UNIFORM

Always the same high quality. Prompt shipment guaranteed and made possible, as each mill is located within switching limits of the two greatest railroad centers of the West. You are assured of your orders being promptly filled.

THE KANSAS CITY PORTLAND CEMENT WORKS. KC CEMENT KANSAS CITY.

SALES OFFICE:
Long Bldg., Kansas City

MANUFACTURED BY

Union Sand & Material Co.

ST. LOUIS	KANSAS CITY	MEMPHIS
Liggett Bldg.	Long Bldg.	Tenn. Trust Bldg.

WETHRPRUFE

Open Mouth

WATERPROOF WETHRPRUFE TRADE MARK
REG. U.S. PAT. OFF.

Bates Valve

WATERPROOF

An Extra Heavy, Extra Strong
WATERPROOF PAPER BAG
For Cement, Plaster, Lime, Etc.

West Jersey Bag Co.

Camden, N. J.

during October. Building operations continue active, prices are found good on lime and cement. Its teams are fairly busy and conditions considered fair, with a good outlook for brisk trade next year.

W. R. Lamoreaux, manager of the yard of the Lake Building Material Company, at Forty-seventh and Leavitt streets, said: "Business this month has been good and there is nothing to kick about the conditions in the trade, barring the weather of the last two weeks, which made things slow on account of bad roads in this territory, making it difficult to haul material to jobs. The streets now are getting in better shape and business is picking up, and we are sure to be busy until the first or second week in December."

T. M. Tobin, of the T. M. Tobin Bros. Company, at 9326 South Chicago avenue, said: "We certainly were busy last month, but this month things are rushing, everybody crying for material to be delivered immediately, and the fact is, we don't know how to meet these demands. However, when night comes, by extra teams and extra exertion, we have managed to keep our patrons in material. This condition is bound to continue until cold weather sets in and we expect by the first week of December that this rush, exceedingly trying to us, will come to an end. It is difficult to get labor and it costs us too much for handling material to leave a reasonable margin of profit. With this exception, conditions are exceedingly good and prospects for the next year are better than they have been any time in the past."

C. D. Russell, manager of the E. C. Donnellan Lumber Company, at Eighty-eighth and Erie streets, said: "There is no let-up to the phenomenal activity we experienced all summer, and this undoubtedly will continue until the close of the season, the forepart of next month. The public improvements in South Chicago have required much building material, and as not half of the work will be completed on these improvements before inclement weather sets in, the prospects here for next year are exceedingly bright."

Hayden Ringer, of Ringer Bros., on the tracks of the Illinois Central, opposite Cheltenham depot, said: "We continue to keep as busy as we have all during the summer months. We employ five teams besides our own. We are furnishing material to the building at the corner of Seventy-ninth street and Cheltenham place, and are hauling paving blocks for the paving of Ontario and Superior avenues. Things look very bright in general and have every reason to believe from conditions around here that 1913 will be even a better year than this one, which has proven exceedingly good."

Calumet Coal & Teaming Company, at 9022 Commercial avenue, is busy with hauling material for street improvement work in South Chicago. It has found no let-up in business this month and expects these conditions to continue till things freeze up.

SAN FRANCISCO RETAILERS

San Francisco, Nov. 18, 1912.—Retailers in most parts of the Coast have suffered some curtailment of business for the last few weeks, as the rainy season is beginning early and many construction jobs have been delayed. Most of the large dam construction in the mountain districts has been suspended for the winter owing to freezing weather, and jetty work on Humbolt Bay has also been stopped by violent storms. This will of course greatly limit the amount of material required for the next few months, but on the whole there is little ground for complaint. In fact, many retailers are finding difficulty in meeting their regular requirements for the season, as their deliveries have been badly delayed by the shortage of cars. The greatest inconvenience is experienced by the local trade, as many contractors are anxious to get their materials just at this time, and stocks of cement and lime in the local warehouses are running very low. Requests for prompt shipment are also being sent in continually by dealers in the country. Most manufacturers have plenty of material ready for shipment, but cannot get the cars to handle it.

If bank clearings are any index to business conditions, the situation on the Coast is certainly promising, as the records of practically all the principal cities for October surpass all previous monthly records. Building records in the cities are less satisfactory, but the smaller towns are making remarkable progress. Fresno, for instance, having a valuation for the month of about $100,000. The total in this city is less than for September, but much better than a year ago, while Los Angeles shows an improvement over both September of this year and October, 1911. Building work in the north Coast cities is still somewhat below normal.

W. S. McLean, sales manager of the Holmes Lime Company, says: "Our retail trade for the last sixty days has been very active in one or two lines, and normal in others."

The Western Pioneer Supply Company has been incorporated at San Diego, Cal., with a capital stock of $30,000. A general building material business will be done, and it is proposed to operate a rock crusher.

MILWAUKEE RETAILERS

Milwaukee, Wis., Nov. 19.—Building operations in Milwaukee have been especially active during the past season, despite the fact that inclement weather was received during the greater portion of the summer. The weather during October and a portion of November has been favorable and building operations are now being rushed. Indications are that a new high record for the year will be attained.

During the first ten months of 1912, 3,500 permits were issued by the building inspector for structures to cost $13,061,684. During the same period in 1911, 3,893 permits were granted for buildings to cost only $10,515,821. During the entire year of 1911, there were 4,367 permits issued for buildings aggregating in cost $12,290,166. During the month of October a total of 425 permits was issued for structures costing $1,196,366. In the same month a year ago a total of 501 permits was granted for buildings to cost $1,073,732.

Retailers figure that their total business for 1912 will be considerably in excess of that of the previous year. A record number of apartment buildings, flats and residences has been erected this year, just the sort of work that calls for a variety of material. Many large structures are going up, including the big home office of the Northwestern Mutual Life Insurance Company, a department store building and four bank buildings.

The Weeks Lumber Company has ben incorporated at Racine, Wis., with a capital stock of $25,000 by Charles M. Gletrich, W. W. Storms and Rosetta C. Bauman. Besides dealing in lumber, lath and shingles, the company will carry lime, cement and a general line of building materials.

NEW YORK RETAILERS.

New York, Nov. 20.—The demand for building materials in the local market has fallen off somewhat during the past month. Although dealers in some sections of the city claim that business is fairly active, the majority of the retailers report that conditions are quiet. Prices, however, are unchanged and remain stiff. The call for lime and plaster is brisk, as builders are rushing work to complete operations before the cold weather sets in. The building plans filed during October show an increase over last month and for October, 1911. Collections are reported to be easier. Dealers are highly optimistic in regard to the outlook for next year, and many are of the opinion that the year of 1913 will be a banner one for the trade.

The Earl E. Litz Company, 810 Broad St., Newark, N. J., have been incorporated to quarry lime, clay, etc., and manufacture building materials, with a capital of $125,000. The incorporators are: Earl E. Litz, East Orange, N. J.; S. S. Demarest, New York City, and George K. Haltman, of Allentown, Pa.

The Asbestos Plastering Company, of New Rochelle, N. Y., has been incorporated to carry on a general plastering and asbestos contracting business. Capital stock $10,000. The incorporators are: Samuel S. Palmer, 543 W. 123d St., New York City; Paul Mende and A. K. Mende, of New Rochelle, N. Y.

The Greater New York Lime Company, of the Bronx, has been incorporated to deal in lime and building materials, etc., with capital of $1,500. The incorporators are: Henry R. Jackson, Benjamin J. Carr and John Gerardi, all of New York City.

E. B. Morse, of the Frank E. Morse Company, dealers in cement, lime, plaster and wall board, remarked as follows: "A satisfactory amount of business has come across during the past month in all building materials. The demand for cement has been very good, and we were kept busy making deliveries. The call for plaster was exceedingly good, and notwithstanding the advance in price which was made last month, there was no let up in the amount of business. The demand for lime was also of good proportions. Business conditions are much improved as compared with a year ago. Collections we note have also improved. While we have the good weather we experienced of late, business will undoubtedly go on briskly."

William C. Morton, general sales manager of the Consolidated Rosendale Cement Company, stated: "Business in some sections of the city is good and in others dealers report that things are quiet. However, conditions on the whole are quiet. The demand for lime and plaster is good. Current work is being finished up and very little new work is starting. The outlook for next spring is very bright, indeed. Rosendale cement is being used in a large way by the telephone companies. Prices are unchanged and are steadily maintained. Quotations for New York, 85 cents at mill, and Boston at $1.05, same terms."

PITTSBURGH RETAILERS.

Pittsburgh, Pa., Nov. 20.—The retail business in Pittsburgh during October and this month to date is keeping up well. The weather has been fine. A good deal of fall building has been starting around the edges. The plants with the industrial and railroad corporations have called for a large number of contracts to be let, and retailers have profited much thereby. Sales of sewer pipe have been large considering the season. Cement has been hard to get; orders have been brisk and the price has been going up right along. Sales of brick have also been good for this season. In general it may be said that the retailers will have a very much better total at the end of the year than last year, and they are especially well pleased with the big improvement in general business and the better prospects for builders' supply trade in 1913.

Much interest is being felt in Pittsburgh about the National Cement Show to be held here December 12-18. The recent preliminary show held at Chicago shows the large number of exhibitors that are going to be present. The Pittsburgh Industrial Development Commission is making extra efforts to advertise the Pittsburgh show in the best possible manner and will have some of the most unique advertising stunts ever pulled off for an exhibit in this town.

A new builders' supply concern in Pittsburgh is that of Kuhns & Co., at 615 West Diamond St., North Side. The firm will carry Bradford pressed brick, Federal terra cotta, interior and exterior marble, etc.

The builders' supply men are greatly pleased over the fact that Public Service Director Joseph G. Armstrong was let off entirely free in the recent councilmanic investigation. Director Armstrong has done more for the city of Pittsburgh in the way of getting big improvements through or well started than any four recent public service directors, it is claimed. The filling of the North Side streets to flood level was in itself a mammoth proposition. So, also, was the Eighteenth street proposition on the South Side, the filling of the West End streets and especially the removal of the hump which is now in progress. Builders' supply men have to thank Director Armstrong for a big proportion of their business the past year, and every one of them wishes him well.

The Dravo Contracting Company has the framework of the Point bridge across the Allegheny river more than one-half completed, and it is expected that the bridge will be opened for travel soon after the first of the year. The central pier is 70 feet above the river stage.

Miller & Coulson are away behind with shipments of building blocks at their plant at Salineville, Ohio. They are now building three kilns there which will give their plant a total capacity of 6,000 building block, 8x8x16 inches, every day. The company is also sinking a shaft to reach a new vein of fire clay. This will open up two sixty-acre tracts, each with a vein of 15 feet. This will also give them access to a splendid deposit of sewer pipe clay which will make their property there much more valuable. The price of their blocks will advance 1 cent each this week, and No. 2 will bring 6 cents and No. 1 7 cents hereafter. The company is running about 45 men and will keep its plant in operation all winter.

The Manufacturers' & Contractors' Club at its meeting last week appointed Scott A. White, George H. Danforth, John A. Strouss, R. O. Bells and S. A. McRoberts a committee to arrange for the annual banquet of that organization the evening of December 16. This will occur the week of the National Cement Show and will be largely attended on that account. The club has recently taken up the matter of advocating the repeal of the lien law of 1901 and its committee is making considerable progress along that line. This matter is also favored by the Builders' Exchange of Pittsburgh, whose president is Robert K. Cochrane. At the club's last meeting George H. Danforth, of the Jones & Laughlin Steel Company of Pittsburgh, spoke, giving an interesting description of the Pennsylvania Railroad Company's ore docks at Cleveland, O.

HEART TO HEART TALKS By An Observer.

PROFIT SHARING

Every little while an article appears in some magazine or newspaper on the beauties, wonders and advantages of profit sharing institutions, both in handling a merchandizing and a manufacturing business. According to the articles in question it is the one and only method by which harmony is to be reached between employer and employee. It is calculated to put them upon the same level with interests in common.

There is no longer to be a head with followers, but all are to work together for the general welfare.

Like many other ideas of people with no practical experience, it makes a beautiful picture. It reminds me a good deal of the picture of the lion and the lamb lying down together. It is one of those idealistic pictures that can only be portrayed by words or conceived in the mind of the theorist.

I have been told that an idealist once gave a commission to an artist to paint this picture, but the artist, having known the pinch of poverty, painted it with but one animal—the lion. There was, however, a slightly distended stomach shown and the rest was left to imagination.

In theory a war between governments is unnecessary. If the theory is right why do we have war? Simply because governments are made up of men, and men are so constituted that they try to settle their disputes by personal encounter. This being a fact, is it a wonder that The Hague has thus far failed to bring about universal peace?

Is it not a fact that the men who instituted The Hague tribunal are overlooking something? There is an old and trite saying, "You can not make a silk purse out of a sow's ear," and it is just as hard to make a man who has always taken the ground that might makes right see himself in error.

Let us go back to the making of the man—the small boy. Did you ever see a small boy who did not delight in picking the wings off a fly? Some mothers think that that is one of his first cute tricks. Then, as he gets a little older he commences to chase the chickens around the yard, or, if raised in a city, torment the canary, until he is old enough to carry the cat around by the tail just to hear it spit.

About this time he begins to fight. For a time he comes home with the losing end of the purse, for he has been picked upon by a larger boy than himself. After a while he finds the only satisfaction he can get is to fight some one smaller than himself. And if his father takes any particular pride in him he will, perhaps, give him a few lessons in the manly art of self-defense, thereby helping him along on the way to The Hague.

I remember, when I was a boy, of a brute about twice my size licking me every time he caught me away from home. He made my life almost unbearable until I quit that section of the city. My inclination for peace would never let me stop hating that kid. After I ran away and went to sea, where I learned boxing, I took a fiendish delight in fighting everyone that came my way, for I was preparing to meet my old adversary. After eight years I came home and going at once to my old stamping ground, with all of the science I had acquired in a dozen different countries, I started out to find my old schoolmate. But luck was against me. I found his brother—but George, the one I wanted, had been killed by a smaller man than himself. I do not know when I ever heard of the death of one of my early school fellows that gave me so much concern.

I have gone off into the natural tendencies of the boy just to show how different theory is from practice, and also to show where the peace party should begin to work. And if the peace party would commence with the children, and if parents would work in conjunction with them, perhaps, in the second generation from now there might be a class of men who could afford to turn their spears into pruning hooks and their swords into ploughshares. But it would not do unless the people of all the world were of the same mild disposition.

Now, this is exactly the case with the profit-sharing idea and that of people all being upon the same level. The trouble is that most of us have not been educated to have consideration for others, and the partnership, as this kind of profit-sharing would amount to, is the ship a man cannot sail in unless the partners are willing to give and take. And if it is so hard for two men to come together in partnership and agree to work in double harness, how much harder it would be for this idealistic solution of the great labor problem, where several hundred men are working under one roof as partners.

Profit-sharing is possible, but the business must remain as it now is—under one head. The sea taught me many lessons, and one of them was that no business can succeed unless it is under the direct charge of one person.

Years ago, on the Atlantic seaboard, before the days when steamers were so numerous, a few sailors would buy a small vessel and sometimes every one of the men, from the captain to the cabin boy, owned an interest in it. They were equals on shore, but the moment the vessel was away from the dock and until she returned to her home port there was but one head.

Profit-sharing is as old as commerce and has been used by fishermen since the first net was cast. The whaling fleet that once sailed from New Bedford never took on a crew any other way. But the vessel itself was apportioned a certain percentage of the barrels of oil, then the captain received what was called his "lay," then the first mate, and so on down throughout the crew. Perhaps

"GOING AT ONCE TO MY OLD STAMPING GROUND."

equals on shore, but the moment the vessel was entitled to one barrel of oil in every one hundred and seventy-five brought home on a three years' cruise.

Profit-sharing is a success when carried on as it should be, and when the employer has the proper consideration for the employee, and vice versa. There must be but one captain to the ship and the communistic idea must be entirely eliminated.

THE WIDE AWAKE MAN.

The wide awake, up-to-date business man of today, however, who is running a retail business, is not the one who is willing to let well enough alone, and is constantly reaching out to better his condition. Show me the successful merchant and I will show you the one who believes in advertising and practices what he believes, for advertising is a continuous game; it must be played as long as the business lasts. And when advertising drops off business will drop off with it.

In order to make a success of advertising the dealer must back it up with a good reputation. He may have a hard struggle to get to a certain point but it never pays him to say to himself that he is well established and does not need to keep on in the old lines. One particular reason for this is that there are other firms starting in business who are doing every thing they can to make a success just as this dealer did when he started, and incidentally, these new men reach out after business and are not particular whose business they get. They are reaching out after your business, and the business of everyone else, because business in itself is a game and must be played to the limit. When you rest on your oars you will find that one by one your customers are drifting away. They are going to firms who seem to be more up-to-date on account of the advertising they are doing, and the possible customer is always an admirer of the hustling business man.

Use Today's Methods.

There is another thing to remember; the advertising you did ten years ago is not exactly the same as what you should do today, because everything is changed. The man who was in business and meeting with success ten years ago, if he has been out of it for the past ten years, would now be at a loss to know how to commence.

The retailer must have certain things in mind all the time. One of them is that he must cover his own territory and arrange his advertising so there will be as little waste as possible. He can only reach out to a certain point, or a certain radius, and he must cover that territory with good advertising. What I mean by good advertising is advertising that will be read. You should always remember that you are not advertising broadcast, and that your territory is prescribed.

As to the proper amount of advertising to do, there is not space enough in any one article to say all of the many things that can be done to bring in trade. In order to be successful one must start right, and I cannot help but mention the fact that one of the best starting points there is is to keep close to your trade journals. The publisher who gets out the trade journal is looking to the interests of his subscribers all the time and one of the strong points taken up today by the trade journals is the proper manner of advertising a retail business. If you will take these journals and read them carefully you will find a lesson on this subject in nearly everyone of them. You cannot take too many of them unless you take more than you possibly have time to read.

Many people who have made a study of advertising have made it on separate and distinct lines. One believes in circular letters, another believes in circulars, another believes in newspaper advertising, and still another thinks he gets the best results from calendars.

Put Yourself In His Place.

All of this advertising is good but it is a good idea for every business man, when considering the subject of advertising, to put himself, if he can, in the other fellow's place. If these different advertising mediums should come to you how would they impress you? What do you think of circulars that come into your office? Do you give them any particular attention? What do you do with calendars?

Some people get out calendars every year, but you know what you think of the calendar the wholesaler sends to you. You may receive a dozen of them, and out of the dozen you may keep possibly two. One of them is most likely to be the calendar that has two-inch figures on it, large enough to be seem across the office. The other is the most beautiful one you receive the first of the year, and in a great many instances it is taken home and the picture cut out. I never have been particularly in favor of calendar advertising. In talking advertising one day in a man's office he said to me that he thought calendars were about as good advertising as a man could have, and he mentioned one he had hanging up in his office. I asked him to go out in another room with me a minute, and when we stepped into the other room I said to him, "Whose calendar is that you have hanging over your desk?" And he could not tell me.

Do you read many circular letters that come into your office? Is it not a fact that 75 per cent of them go into your waste basket?

The Personal Letter.

I believe that one of the strongest advertisements the retailer can put out is the personal letter, not the imitation typewritten letter, but a personal letter written on the typewriter and personally signed and sent out, of course, under a two-cent stamp. Make your letters short and to the point, and where you will get one circular read you will get a hundred letters read.

No doubt you will say that letter writing costs money, because when you use the typewritten letter, the stenographer's time and the postage, it amounts to perhaps five cents a letter, but one typewritten letter is worth more than five, or even ten circulars.

Your Local Paper.

Your local newspaper is one of the best advertising mediums you can get, and seemingly very

few understand what can be done with a local paper. Your advertisement may be made very profitable, or of very little account, according as it is made up. If you simply put your card in the local paper, and let the publisher put it where he likes and not change it, it will do some good, although it is nothing more than a publicity proposition. You will not get one-quarter, no, not one-hundredth part of the good from it that you would if it were written up carefully, perhaps illustrated, the copy changed frequently, and seen to that it was given a conspicious place in the paper.

Getting Pointers.

The writing of advertisements and circulars, as well as the getting up of advertising letters has come to be a combination of science and art. When you write an advertisement, or an advertising letter, you are contending with a whole lot of other bright men; men who have made a study of advertising, and some of these advertisers enlist the services of professional advertising experts to write their copy for them. This matter of properly getting up an advertisement is worth looking into, because it does not pay to be a follower. In advertising, as well as in everything else, you want to be a leader.

If you are getting up your own advertisements there is no better study than that of carefully reading the advertising pages in the better class of magazines. Of course, the magazine ads are gotten up by the highest priced men and there are always little ideas that you can get from them, and although what you make up may be entirely foreign to that portrayed in the ad of the man who is reaching out for the people of the whole United States, there is always something suggestive about the ads that you can appropriate to your business.

Back Up Your Advertising.

As I have said before, advertising needs to be backed up at your place of business. Courteous treatment and fair dealing is what helps your advertising. Your office should be neat and well kept, because everyone likes to go into an attractive place. A little extra money spent on a good team, your horses well taken care of, and the harness kept in good shape, all of these things help; in fact, they are advertisements in themselves.

The best assistance you can have in your business is satisfied customers. You can advertise and get the customers, but it is another thing to keep them and keep them satisfied. This takes more study even than advertising. If you can get a certain number of satisfied customers, and keep them satisfied, you have an income, but still you must keep on advertising, because although you may have all the customers you want today, these people may move away, or for some reason you may lose them, and in a great many cases through no fault of your own.

Don't Advertise Prices.

There is only one thing in advertising that I do not believe in, and that is in advertising prices. I think that is one of the worst features that some people put out. Of course, they advertise prices on certain lines of goods, but not in building material. It is destructive to the business. Advertising prices always looks to me like poor salesmanship. Anyone can give away material. It takes a salesman to sell it. Advertise your quality, advertise prompt delivery, advertise anything that you are willing to give but keep away from the prices.

Do not ever permit yourself to say that you do not believe in advertising, because as long as you are in business you are an advertisement of your business.

TRUSTING TO APPEARANCES

On Thursday, the twenty-ninth day of October, I was in Detroit enjoying the scenery of that beautiful city. At times I listened to the interesting talks of men who are so full of association ideas that it would not seem possible for them to talk on any other subject.

Of a sudden it occurred to me that I had neglected my laundry. You know it is always better to put it that way rather than to acknowledge a touch of soiled linen about one's person.

My next move was to hie me to a haberdashery. Now don't that sound good? In England a haberdasher's shop is where they sell ribbons, pins, needles and other small wares but there seems to be lots of those names that get sea sick and turn into something else coming over. Here, it seems to mean shirts, collars, cuffs, etc. "Well, anyway," as Bobby Gaylor used to say, I found a place where they sell collars for men, and dropping my suitcase beside the counter waited for the dyspeptic looking chap I saw at the far end of the store to come and wait on me. The minutes rolled by but no one came. The chap would look up once in a while to see if I was still holding the fort. Five, ten, twelve minutes had passed when the aforesaid dyspeptic came hurriedly forward and said in a quick, snappy way: "We don't want to buy anything today."

"No," said I, my breath almost leaving my body as I realized that because of my suitcase he had taken me for a traveling salesman. My thoughts traveled quickly in the direction of repartee. Repartee, you know, is usually that which you think of tomorrow and wish you had said today.

I reached out into tomorrow and secured this: "My dear sir, is it not strange that we should all of a sudden become of one mind? I came in here with the intention of buying some shirts, underwear, collars, cuffs, etc., and this suitcase that frightened you so is empty. I brought it along so I might carry my purchases back to the hotel with me."

"You will excuse me, my dear fellow," said the dyspeptic, "but you see we are bothered so much by drummers, and we never waste time with those we don't know. I shall be glad to show you our goods."

"Not for me, Mr. Latecomer, I wouldn't buy a cent's worth of you if I had to wear a dirty shirt for two months. I am a salesman myself but I thank my lucky stars I am not selling neckties if I would be obliged to run up against such specimens as you. How do you manage to keep your trade anyhow, can you act the hog to one man and

"DEY'LL GO HOME!"

soft soap the next one? You certainly got your wires crossed on me."

"Come, come, don't let's quarrel; I made a mistake, but I know how to treat people."

Just then some customers came in, and I was glad they did, for two reasons; first, I was getting real mad, and second, I had to carry that "empty" grip out and I wanted to do it when he wasn't looking. Did you every try to carry a grip weighing forty-five pounds and make it appear as though it was empty? Just you try it once.

Do you know I believe I would rather be turned down by a man with a broad smile and a hearty laugh, than to get an order from a cross-grained dyspeptic like that, and I have been wondering ever since if there is many of his kind on earth. If there is I am sure they are not in the building material business, and for which I am truly thankful.

After all, it may not be altogether the man's fault for it is pretty true that men who deal in big things are more apt to be big and broad mentally than the chap who sells peanuts or pop corn.

Really, a dealer in any kind of goods can hardly afford to give the cold shoulder to a salesman. The dealer stays in one little place most of the year, and the salesman is out in the great broad world, and if he is an observer he has a fund of knowledge that is worth a lot to the man in business. The average salesman is a bright chap; he is always picking up new ideas in regard to the business he is in and he can often help a dealer over a knotty problem, because he has seen it solved somewhere else,

This jumping at conclusions, and judging by appearances, is bad business. I was taken for a minister once; just think of it! but that is another story. But honest now, ain't it the truth that a fellow will make deductions, hit it right once in a while and then fall down on a proposition and have to back up and go the other way?

Down in Kentucky one time a gentleman by the name of George Bock was passing a door yard, and hearing a commotion he stopped to see what the trouble was. A powerful negro woman was sitting on a chopping block with a small sized man across her knee, and she was spanking him good.

"Look here, Auntie," said Mr. Bock, "who is that man you are using so bad? You might injure him for life."

"Who am he," said the wench, as she gave him an extra hard thump, "who am he, he's ma husban', he is and he done 'ot to be whipped to deff."

"What has he done?"

"He done plenty, he done left de hen house do' open an' de chick'ns all walked out."

"Well, Auntie, that ain't such an awful thing to do, the chickens will all come home."

"Huh!" said the wench, as she rolled the little man off her knee onto the ground, "dem chick'ns won't come home, dey'l go home."

ADVERTISING A RETAIL YARD

Advertising is a very large subject. It seems that everyone has his own opinion in regard to it. It is a subject to which every business man has devoted hours of thought, and millions of dollars are spent each year on advertising, but not all of the expenditure is judicious. Manufacturers, as a matter of course, are the ones who spend the greater part of the money put into advertising, but the purpose of this article is to indicate the proper way to advertise a retail business. I am sorry to say that there are yet many people in the retail business who ask themselves if advertising pays. This is a question which, if it had been asked ten or fifteen years ago there might have been some excuse for, but today it should be obsolete with the retail dealer.

The question today should not be, does advertising pay, but rather, what kind of advertising brings the greatest returns for the money expended, and the man in this day and age who asks the question, does advertising pay, puts himself way back of the present time; in fact, he stamps himself more or less of a back number.

Some merchants are willing to take things as they come, but it is the pushing merchant in any line who succeeds. Of course, some men who do not advertise succeed in a way, and yet, the man who pretends that he does not advertise really does advertise in some way or another or he would not accomplish anything. There are those who have made a success to the extent that they have been able to supply their families with the necessities of life, and possibly some of the luxuries, and are therefore content to let what they consider well enough alone.

A TACTFUL MANAGER

One of the most tactful men I ever met was J. A. Robertson, who built and was general manager of the Monterey and Mexican Gulf Railroad, running from Monterey, in the state of Nuevo Leon, through the state of Tamaulipas, to Tampico, Old Mexico. I was employed by him to write a description of the country through which the road was to be built.

My orders were to find out all I could about the country, soil, crops, climatic conditions and the kind of people he would have to contend with along the line of road. "And," he added, "whatever conditions you find, remember and use tact."

"How can I use tact?" I asked. "You are going through that country anyway, and if they don't like it they will have to lump it."

"Not so fast, my boy; not so fast! These people have never seen a railroad and the benefits must be explained to them. They have been hauling goods through this country with ox teams since Columbus discovered America, and they must be prepared for the iron rail and the iron horse. For while it is true that we have a concession to build the road, we will have less trouble if the people are with us."

"What are you going to say to one of those rancheros who says he won't have the iron laid across his hacienda?"

"Tell him we will put down wooden ones."

I did not wait for more instructions, as I caught the drift of my employer's desires.

It was a long horseback trip and when I came back the road was finished to Montemorlos. This town was a hundred miles out from Monterey and when the first engine was ready to go into town, Manager Robertson decided he would shift the

responsibility of any of the natives being hurt to to the townspeople, and he suggested to them that they appoint a guard, and worded it this way: "To keep the Americans and Mexicans away from the engine."

I could not see the sense of this at the time, because I thought the natives would be afraid of the engine. In this I was mistaken, however, but the guard did not do as much toward keeping them off the engine as the hot boiler did, and many of them were burned before they could understand that they had to let the hot parts alone.

It was a queer sight; every part of the engine and tender that was not too hot to touch was covered with natives. They reminded one of flies on a sugarbowl.

The guard who had been appointed by the city fathers was clothed in the most gorgeous makeup I ever saw on or off the comic opera stage. He was armed with a cavalry saber, and as he was an undersized man, about two feet of the scabbard dragged on the ground.

Poor fellow! when the second engine rolled into Montemorelos, in his excitement he tripped over the sword, fell under the engine and was cut in two. But Manager Robertson's foresight and tact had saved the company any trouble on account of the accident, and the killing of one of their number did more to keep them away from the engine than a regiment of soldiers could have done.

When the road was built to Linares, about fifty miles further south, the manager conceived a plan of interesting the natives in the road by getting up a picnic at the end of the line. Only a few of the passenger coaches had arrived in Monterey, and what there were were used for the Monterey people.

Flat cars, nicely arranged with seats, were used for the people of Montemorlos. The cars at the station at Montemorlos were crowded when the train of passenger coaches came through on its way to the picnic grounds. Possibly no one would have thought of the difference in the cars, as it had been explained that the equipment had not all arrived, had it not been that a young lawyer who lived in Montemorlos took it into his head to be insulted because the people of Monterey had all the fine cars, while the people of Montemorlos were given only freight cars. He harangued the crowd, told them of the insult, and jeered at them for allowing the railroad to make them ride in what he called dirt cars. However, the people had made up their minds to go; all of them that could get on board the cars, especially as it was a free trip, and although what the lawyer said did set them thinking, the picnic was well attended.

The next day word was brought in to the general manager that this young lawyer was doing a lot of talking against the road, and was sending out a call for a mass meeting to devise some means of resenting the insult that had been put upon them.

I was in the manager's office at the time the word was brought to him in regard to the young lawyer, and after he had heard the man's story he sat and looked into space for a few moments and then said.

"Go and bring that man here."

In due course of time the lawyer was brought in and the conversation between the lawyer and the general manager was carried on through an interpreter. They were introduced. Both bowed and smiled.

"Tell him," said the manager to the interpreter, "that I understand he is a very fine lawyer."

This the interpreter did. The lawyer smiled and bowed very low. The manager did the same.

"Tell him I am going to give him a check for fifty dollars as a retainer and that I want him to hold himself in readiness to take care of any legal business the railroad may have in Montemorlos or vicinity, and I will notify him when he is wanted."

This was told him by the interpreter. The lawyer smiled and bowed again, lower than before. The check was brought, signed and delivered and a receipt taken for it in regular order.

There was no mass meeting.

Tact should be one of the resources of the successful business man. It takes tact to handle men and tact to handle customers. It takes tact to buy goods advantageously and it takes tact to sell goods at a profit.

Tact in business is like a drop of oil on a dry axle. It makes it run smoothly.

Tact is something that is not for sale. It must be acquired in some other way, unless it comes to one naturally.

The trouble between you and that fellow who passes you on the street without speaking is, one or the other of you fails to use tact.

Which is it?

HAVE SYSTEM IN COLLECTING

One of the secrets of success in business is in carefully watching the credits, and in having a good system in following the collections. There is seldom a loss from a bad account which could not have been collected had it been taken in time but, as a rule, the dealer is too busy looking after some other detail of his business to keep a close watch on all of his slow accounts, and time passes so rapidly that some accounts become long past due, and are therefore much harder to collect.

Every business should have someone who is interested in watching collections. If a collector is employed he should be prompted by the bookkeeper, and this should be made a part of the bookkeeper's work. A first-class plan in this connection is to have the bookkeeper draw off any unpaid accounts on the 15th of each month. Have this sheet hung up on the bookkeeper's desk where he can look it over every day. It should be the collector's business to refer to the list every day and if the bookkeeper is interested in keeping up a good bank balance, and will work in connection with the collector good results will be had in keeping the accounts down to somewhere near what they should be. When the collector goes after a past due bill he should report the result of his call to the bookkeeper all about what the debtor said. If possible he should get the delinquent to agree to some definite time when the bill should be paid. A memorandum of this should be made on the list and the date should not be allowed to slip by without the delinquent being seen. When you have a due date it is very easy for the collector to appear surprised if he does not get his money.

Promptness in collecting never yet lost a man a good customer. There are people who are perfectly responsible who seem to take pleasure in delaying payment of their bills. Occasionally a man of this kind will get mad if pressed to pay, but if he is handled with care there is not much danger of losing him as a customer. Tell a man frankly that collections are a little slow; that you have bills to meet, or any other thing that comes handy and, as a rule, he will come across without feeling put out. And if a customer is unreasonable it is perhaps just as well to let him go.

I have always been a great believer in prompt collections, for I have found that short accounts make long friends. The average man is reasonable, and although many men do not seem to realize that you need money to carry on your business until you tell them about it, when you do put it up to them with tact you are more likely to make a friend than to lose one.

The new dealer in business sometimes hesitates about asking a man regarding his credit. This is decidedly wrong. If the man is a stranger, and asks credit, it is not only the dealer's privilege but his duty to himself to ask all the questions he wants to. If a man gets angry when you ask him about his credit remember it is better to have him angry before he owes you than afterwards.

Credit is a very delicate thing to handle and when you are seeking information about a man you want to be careful about the source from which you obtain it. I remember one of my first experiences in that line. An honest looking joskin came to me for credit and told me who he had been trading with. He said the reason he wanted to change was because my yard was so much nearer than the one where he had been trading. He referred me to the man he had been trading with for two years or more and said Mr. L would not care, as he had so many other customers. I called on Mr. L and told him about the case and asked him what I should do. He told me the man was all right; that he was doing a big business, and gave a note once in a while, but he added that he always paid his notes. I thanked him and felt quite fine over my new customer. The sequel proved that the contractor and Mr. L put up a job on me. The contractor was badly in debt to this dealer. In about six months the contractor failed. He had a clear slate with Mr. L and I was stuck for eighteen hundred dollars.

CAUTIOUSNESS.

Caution is an admirable quality, and a necessary one, but undue exercise of it has been a hindrance and a blight to many careers that otherwise would have blossomed and been fruitful.

Caution, like most everything else that men have to deal with, can be carried too far or not far enough. It really is one of the most difficult questions in the affairs of commercial life to handle. Too much caution retards progress and too little is very apt to lead to bankruptcy.

The timid man never gets anywhere. He permits opportunities to slip past him at every turn. He may have all the other requisites for a successful business career, but if he is overcautious he does not realize the benefit of them.

Of the two, overcautiousness or the lack of caution, the latter is perhaps preferable. The chances are that the ambitious man, who is willing to take some risk, has the sagacity and other qualifications calculated to put his efforts through to successful issue, while the other is foredoomed to mediocre accomplishment, if not, indeed, total failure.

It comes to the experience of every man at one time or another to say that if he had followed certain ideas he would have been better off. He finds many times that the thing he had in mind to do, but was restrained from doing because of his cautiousness would have been greatly to his advantage. Opportunities, while presenting themselves frequently, are not so numerous that a man can forever afford to let them pass because of an element of risk involved. Life is short and a man's business life—the years during which he can be active and go the pace of present-day industrial life—is shorter yet. It is, perhaps, better then to run a certain amount of risk or even make a failure and start anew than to never attempt other than the "dead sure" things that benefit a man but little.

No one ever learned to swim by sitting on the bank and looking at the water.

THE LITTLE THINGS.

As great oaks from little acorns grow, so do many great business institutions grow from little things, well done. When taken together the little things contribute in no small degree toward making up the big things that make for the success of business enterprises.

There are, of course, certain fundamental principles that must underlie every successful business. A man, or a company of men, who undertake to carry on a business must have practical knowledge of the particular business in which they embark. They must have sufficient capital, desirable location, a promising field for the sale of their goods, and they must buy or produce their goods to such advantage as will enable them to meet legitimate competition. They must also possess the qualification of salesmanship. These and other things which enter into the fundamental principles must be taken into account before a business can be expected to succeed.

But there are many little things which enter into the policy of a business destined to succeed, or which has already succeeded. One of the first of these is the quality of being obliging. This quality, of course, enters largely into salesmanship, but it enters as well into many other things pertaining to a business. No matter what the business is, or where it is located, it is possible to make friends by being obliging, and the friends so made become a direct, or indirect, source of profit.

In the way of illustration of this idea, as applied to the retail business, can be cited the experience of a man who stepped into a store in an outlying district of Chicago the other day and asked for certain information which required considerable time and investigation on the part of the proprietor. The storekeeper not only took pains to hunt up the information for the stranger but he did it in an affable and obliging way. After getting the information desired the stranger thanked him and left the store without having made a purchase of any kind, but a few hours after, having occasion to make some purchases, he walked several blocks out of his way, and passed several other stores that handled the goods he wanted, to spend his money with the storekeeper who had been so obliging earlier in the day.

These little attentions are as beneficial to other kinds of business as they are to the retail storekeeper. They apply to big business as well as to little business. It has become a custom among many of the large corporations, and even railway officials, and others in authority in business of a character considered as more or less monopolistic, see that the little things, and among them the accommodation and obliging treatment of their patrons, and the public generally, is practiced.

An opposite attitude toward customers and others is as detrimental to a business as the obliging treatment is advantageous. The good or bad effect, according to the treatment accorded, is recognized by perhaps the greater number of business men of today. The fact that the policy of being obliging is in vogue by most of the successful business organizations, whether a direct sale is involved or not, is in itself ample evidence of the advantage of looking after the little things. Attention, consideration and obliging treatment.

GRAVEL AND STONE—QUALITIES—TESTS

By A. T. Goldbeck, Testing Engineer, U. S. Office of Public Roads—Read Before The American Road Congress, Atlantic City, October 4-5, 1912.

Of the many elements which make for the success of a waterbound macadam or gravel road, there is none of more vital importance than that of the proper selection of the stone or gravel entering its construction. The rock must be adapted to properly combat the conditions of traffic and the destructive elements of nature which it must encounter. Passing vehicles and horses' feet exert a pounding or impact action on the road surface and at the same time subject it to wear through abrasion. The result is a pulverization of the surface material, a necessary destructive effect since the integrity of the road is maintained through the cementing or binding power which the rock dust thus formed exerts on the larger particles of stone. Much of the powdered material does not remain in place on the road surface, but is washed away by the rains and is scattered in clouds of dust raised by the winds. The ideal condition is realized, however, when the wear of travel produces just sufficient binder to hold the road stones together. When excessive wear grinds up too much fine material, dust and mud must develop. On the other hand lack of wear will produce too little dust to replace that lost through the mechanical action of the elements, and the larger particles, deprived of their firm and binding support, become loosened by passing vehicles and the road surface ravels.

When heavy and continuous travel is to be carried, nothing but hard, tough rock of good binding qualities will give satisfaction; for should the stone be lacking in hardness or toughness, excessive dust in dry weather and a muddy surface in wet weather will be produced. Light and intermittent travel requires material which will more readily grind to powder in order that sufficient binder may be produced to replace that lost through the mechanical agencies of wind and rain. It would be just as unwise under most weather conditions to construct a lightly traveled road of hard, tough trap, as to build a heavy traveled road of soft, friable limestone, since in the first case the road would ravel through lack of sufficient binding material to hold it together, while in the last case excessive powder would be formed with the production of a dusty and sometimes muddy surface.

Agencies other than the mechanical action of traffic attack the road surface with destructive effect, and most severe among these is frost. Although it is probable that the rock in the road surface is not affected very much by frost, the expansion, due to the freezing in a very porous surface, is considerable, making it all the more desirable in the selection of a road material to procure one with as high a cementing value as possible in order to form a dense impervious surface.

Physical Qualities of Road Building Rock.

It will be recognized that a road building rock must possess the following characteristics in order that the road surface may be preserved in good condition; it must be of sufficient hardness and toughness, and it must have good cementing or binding qualities.

The hardness of a road material measures its ability to resist the abrasive action of traffic in causing displacement of the surface particles by friction.

The toughness of a rock is a measure of its ability to resist rupture due to the impact of traffic.

The cementing or binding power of a rock determines how firmly the individual stones will be cemented together by the rock powder formed through the action of traffic.

There is one other feature which is doubtless of much importance in judging of the probable bond of the rocks in a road surface, namely, the shape of the finer particles of the rock or screenings. Sharp, angular particles, through their wedging, non-rolling effect, are doubtless more efficient in aiding the bond of a road surface than are fragments of rounded shape, and this factor should be taken into consideration in judging of the probable action of the road surface under traffic.

The Testing of Rock for Road Building.

The testing of rock for road building has been carried on for over thirty years, the first systematic attempt to determine the relative value of road building rocks having been made in the French School of Bridges and Roads in 1878. It was here that the Deval abrasion test for rock was developed, and it is at the present time standard throughout the United States. Not until 1893 did this country begin the serious investigation of road materials, but during that year the Massachusetts Highway Commission established a laboratory in the Lawrence Scientific School of Harvard University under the direction of Mr. L. W. Page. In 1900 the United States Government installed a laboratory in the Department of Agriculture, and this is now a part of the organization of the office of public roads, where the testing of road materials is undertaken without charge for any citizen of the United States who may apply for its services. The necessity for the investigation of road metal has likewise led to the installation of testing equipment in many technical institutions both of this country and abroad, and to the establishment of road materials laboratories by many state highway commissions.

Physical Tests of Road Materials.

The following tests are of value in investigating the physical qualities of rock for road building: (1) Hardness, (2) Toughness, (3) Resistance to Wear, (4) Cementing Value, (5) Specific Gravity, and (6) Absorption.

Dorry Hardness Test.

To judge of the resistance of rock to the abrasive action of traffic, a core one inch in diameter is cut from the solid rock by means of a diamond drill, and subjected to the grinding action of standard quartz sand, between a No. 30 and No. 40 sieve, fed on a revolving steel disc against which the test piece is held with a pressure of 1250 grams. When the disc has made one thousand revolutions the loss in weight of the sample is determined. In order to report the results on a definite scale which will be convenient, the method has been adopted of subtracting one-third of the resulting loss in weight in grams from 20; thus a rock losing 6 grams has a hardness of 20 minus six thirds, or 18. Through a consideration of the results of hundreds of tests, the following interpretation of the hardness tests seems to be a fair one: Below 14, rocks are called soft; from 14 to 17, medium; above 17, hard. The arbitrary constant 20 was selected with a view of giving the results of this test about the same range of variation as the French coefficient of wear to be described later.

Toughness Test.

To resist the severe impact of traffic on the roadway, road material must possess the quality of toughness to a high degree, and this quality is tested in a machine designed on the pile driver principle.

The specimen consists of a core 25 mm. (one inch) in diameter and 35 mm. high, cut from the solid rock by means of a diamond core drill and carefully faced off at both ends on a grinding lap. A spherical ended plunger is brought in contact with the specimen and a two kilogram weight is allowed to fall on the plunger, thus approximating the blows of traffic. The height of the first blow is one centimeter and each succeeding fall is increased one centimeter in height until the specimen ruptures. The height of the last blow, which corresponds with the number of blows delivered, is taken as the index of the toughness of the specimen. This test was designed by Mr. L. W. Page and has been adopted by the American Society for Testing Materials. In interpreting the results, rocks which run below 13 blows are called low; from 13 to 19, medium, and above 19, high.

Abrasion Test.

The abrasion test, as performed in the Deval abrasion machine, tests the hardness as well as the toughness of rock, and since its development in the French School of Bridges and Roads, much valuable information has been obtained on the wearing qualities of rock. This test, which is a hardness and toughness test combined, acts as a very good check on the results of the separate hardness and toughness tests, and is performed as follows: Eleven pounds (5 kg.) of broken rock between 1¼ and 2½ inches in size. Fifty pieces if possible, are placed in a cast-iron cylinder mounted diagonally on a shaft and slowly revolved 10,000 times. Material which passes a one-sixteenth sieve is considered as worn away, and the per cent of wear is calculated on this basis. The French coefficient of wear is obtained by dividing 40 by the per cent of wear. Thus a rock showing 4 per cent of wear has a French coefficient of wear of 10. The French engineers, who were the first to undertake road material tests, adopted this method of recording results. They found that their best wearing rocks gave a coefficient equal to about 20. The number 20 was, therefore, adopted as a standard of excellence. In interpreting the results of this test a coefficient of wear below 8 is called low; from 8 to 13, medium; from 14 to 20, high; and above 20, very high.

Page Impact Cementation Test.

The cementing power of a road material is the property possessed by the rock dust or other finely divided material to act as a cement on the coarser fragments composing the road. This property varies greatly with different kinds of rock, and the absence of cementing power is so pronounced in some varieties that they can never be made to compact under the roller. Other rocks bind together very readily and form a firm, impervious surface, very highly resistant to the wind and rain and the raveling action of traffic. The method of testing the cementing value of rock dust is as follows:

One-half kg. of the rock to be tested is broken sufficiently small to pass a ½-inch mesh sieve. This material is placed in a ball mill together with 90 cc. of water, sufficient to produce a stiff paste after grinding. The mill contains two steel shot weighing about 20 pounds each and is revolved at the rate of 2,000 revolutions per hour. At the end of 5,000 revolutions the material is removed from the mill and compressed into briquettes 25 mm. high and 25 mm. in diameter under a pressure of 132 kg. per square centimeter.

After drying for 20 hours in the air and 4 hours in a hot air bath at 200 degrees F. the specimens are allowed to cool in a desiccator and are tested in a specially designed impact machine. The test consists in allowing a 1 kg. weight to fall through a height of 1 om. on a flat end plunger which rests on the specimen. The number of blows required to destroy the specimen is taken as the cementing value of the material. Below 10 the cementing value is called low; from 10 to 25, fair; 26 to 75, good; 76 to 100, very good; above 100, excellent.

Absorption

The absorption is obtained by immersing a small sample, weighing about 10 grams, in water for four days, noting the gain in weight during that period, and finally expressing it in pounds of water absorbed per cubic foot of solid rock.

Interpretation of Laboratory Tests.

The following facts should be taken into consideration before attempting to interpret the results of the laboratory tests on samples of rock intended for use in macadam road construction, viz.: 1. The character of the traffic to which the material is liable to be subjected, whether (a) automobile, or (b) horse-drawn, and if so, whether (1) heavy, (2) medium, or (3) light. 2. The character of the material under examination, that is, (a) its name, and (b) its approximate mineral composition and structure. 3. The behavior of material of a similar nature in actual service.

A knowledge of these three points is essential to an intelligent interpretation of the laboratory tests in any specific instance.

1. Character of Traffic—Waterbound macadam, in general, is not practicable where much automobile traffic exists, but is only suitable for horse-drawn travel. Assuming the traffic to be principally horse-drawn, it is well to know whether it is heavy, as in the vicinity of large cities; medium, as on the principal highways; or light, as on park or less important country roads.

2. Character of Material—In order to compare a material under test with similar materials in service, it is of value to know the name and character of the specimens.

3. Behavior of Similar Rock in Service—Laboratory tests can do little more than approximate the conditions of traffic, and in order to correlate the results of these tests with the behavior of the material in service, it is necessary to have a knowledge of similar material under service conditions.

Experience shows that, in general, the following limiting values for laboratory tests may be used

in determining the value of a rock for road building when taken in conjunction with previous service behavior of a similar material:

Table of Limiting Values.

Character of Traffic—	Results of Tests— Per Cent of Wear.	Hardness.	Toughness.
Heavy	2.5 or less	18 or over	19 or over
Medium	2.5 to 5	14 to 18	14 to 19
Light	5 to 8	10 to 14	8 to 14

The cementing value should in general run above 25 for all classes of traffic, except in specific cases, as noted below.

Physical Characteristics of Road Building Rocks.

Trap—The trap rocks including the usual varieties of diabase, basalt, andesite, diorite and gabbro are particularly well suited for roads subjected to heavy teaming on account of their high resistance to wear, hardness and toughness. They bind well on the road provided the traffic is heavy enough to supply by wear enough fine material to replace that lost by natural causes. As a whole, the traps are better suited for the construction of macadam roads subjected to moderately heavy traffic than any other road making rock.

Limestone and Dolomite.

Limestones as a rule are not very hard or tough but possess a good cementing value and show low-medium resistance to wear. Limestones are therefore not suited for the construction of waterbound macadam roads which are subjected to very heavy traffic, since this class of traffic will wear away such a road too quickly. For the construction of roads subjected to light or medium-light horse-drawn traffic, however, limestone is a material which is almost ideal.

Limestones in their physical characteristics are very much alike, although the crystalline limestones are least suited for road building because of their low toughness, which property renders them liable to fracture under the impact of traffic. The indications are that the siliceous limestones are those best suited for macadam construction.

Granites.

The granites are generally lacking in toughness and binding power, and are therefore unfit for use as a class in any but the foundation courses in macadam roads. Although they sometimes show good cementing qualities in the laboratory, particularly the material which is highly altered, experience has shown that it should not be used for surfacing on account of the ease with which it disintegrates under traffic.

Sandstones.

Sandstones are extremely variable in their physical characteristics. Some of them are hard and tough, while others are very likely to fracture under impact. As a class they do not bind well in the road, and for this reason they should be used only for the foundation course when their hardness and toughness is sufficient to warrant their use for this purpose.

Chert.

Chert is a very hard material and usually shows good resistance to wear. It makes excellent material for the construction of macadam roads, as it invariably binds together well.

Gneiss, Schist and Slate.

Gneiss, schist and slate are very unsatisfactory materials for road construction because of their foliated structure, which renders them extremely subject to fracture under impact. They should not be used in road construction when a better material is available.

Marble and Quartzite.

Neither marble nor quartzite is of much value to the road builder for the wearing courses of macadam roads. Marble, on account of its crystalline structure, is lacking in toughness, while quartzite is a poor road material on account of its extreme hardness and lack of binding power.

Character of Rock for Bituminous Construction.

Bituminous binders afford great protection to the stone used in bituminous construction, when the road is properly maintained with a surface paint coat of bitumen. The surface mat and the bituminous binder between the stones prevent the grinding up of the stone portion of the wearing surface and likewise reduce the effect of shock or impact on the rock in the body of the road. It seems to be a fact that stone which is so low in hardness and toughness that it cannot be used in waterbound macadam, may be used with perfect success in bituminous work. The bituminous binder renders it possible to use many rocks, such as sandstones, schists, quartzites, marble, etc., which do not bind or are too friable for the construction of waterbound work. Although some rocks crush up into fragments whose sides are too smooth to offer a perfect bond for the bitumen it is probably true that almost any rock which will not crust up too much under the roller is suitable for use with a bituminous binder.

Gravel.

The term gravel, as applied to road building, is one which has different meanings in different sections of the country, and conflicting ideas seem to exist as to what class of material should be included in the term. Thus, what in parts of the country would be called coarse sand, would be termed gravel in other sections. Again the word is sometimes made to include material ranging from the finest particles to the coarsest shingle and boulders.

From the standpoint of the road builder gravel should be composed of the products of rock disintegration ranging in size from finely divided clay up to the largest pebble which may be used in construction, which in general, should not be greater than two inches in largest dimension.

In the selection of a road building gravel there are several very important characteristics which should be investigated, and these are:

1. Character of rock composing the fragments.
2. Shape of the fragments.
3. Relative grading of the different sizes of particles.
4. Amount and character of the finely divided or binding material.
5. Cementing qualities of the material.

1. Character of Rock Composing the Fragments.—Just as in the case of the waterbound macadam road, the durability of the wearing surface of a gravel is dependent in part on the hardness and toughness of the stone of which it is constructed. Gravel being composed of waterworn or glacial-worn rock fragments, is made up of various types of rocks some of which are not entirely adapted for road construction because of the ease with which they grind up under traffic. Thus the limestone and sandstone gravels, and those composed of micaceous fragments are less durable than those made of fragments of trap or granite. A laboratory inspection of gravel should therefore include a determination of the character of the fragments composing the sample, and this in most cases may be done by a supervidial examination of a sufficient number of particles fractured for the purpose.

2. Shape of the Fragments.—The shape of the pebbles should be considered since it is doubtless true that fragments of angular character furnish a more effective mechanical bond than do rounded pebbles, and where a choice lies between two gravels equal in other respects, the sharper, more angular particles should be given the preference.

3. Relative Grading of Different Sizes of Particles.—Gravel which is graded in size so that the smaller pebbles fit into the interstices between the larger ones, is much denser and more stable in the road than that which is composed of all fine or all coarse material. Graded in this way, gravel requires much less binding material and presents a more durable wearing surface which is less likely to ravel or become muddy and dusty than that in which more fine binder is required.

To determine the grading, a sieve or mechanical analysis is made. This is done by passing a dried sample of the material through sieves of different sized mesh and determining by weight the amount retained on each. The sieves in use in the Office of Public Roads, have circular openings of the following sizes: 2", 1½", 1", ¾", ½", ¼", ⅛", and those with 10, 20, 30, 40, 50, 80, 100 and 200 meshes per lineal inch. Sieve analysis furnishes a means of judging whether the gravel might not be improved by screening out the fine material or perhaps by combining it with material from another source to give it a more uniform grading. It is a useful test in judging the presence of too much sand, which might have the effect of creating a loose unstable road surface.

4. Amount and Character of the Building Material.—The binding material in gravel, as a rule, may consist of the powdered rock itself, or clay, ioa, iron oxide, silica, etc.

Clays are of variable binding qualities and a very quick rough determination of the binding power may be made by moistening a small amount of clay between the fingers and noting whether it has a sticky or gritty feeling. The sticky or fat clays are of good cementing qualities. Gerruginous clays are very good binders and invariably gravel containing fine material of this character cements together exceptionally well on the road. If the stones composing the gravel grind up into dust which is high in cementing qualities, this dust makes the best kind of a binder. It is for this reason that trap rock gravels make such excellent road materials since they possess cementing qualities as well as durability.

Gravels composed of poor binding materials, such as quartz, sandstone, granite, etc., must always have binding material mixed with them in amounts not to exceed about 10 to 12 per cent. It is far better to have too little than too much binder, since much fine material will be formed through the grinding of traffic.

The amount of binder in a sample of gravel may be obtained by washing out the fine material, evaporating the wash water to dryness, and weighing the residue which may be considered as cementing material.

5. Cementing Qualities of the Material.—The cementing value of the binding material is obtained by grinding it with water in a ball mill, forming it into briquettes and subjecting it to the impact cementing test as practiced on crushed rock samples.

A preliminary investigation of road materials, by means of laboratory tests, furnishes information of great value to the road builder. From the test results not only can judgment be formed regarding the probable suitability of the material for the purpose intended, but the relative worth of a number of samples can be determined, thus rendering it possible to make a more economical selection of rock or gravel from several available sources of supply.

ILLINOIS SAND AND GRAVEL

Springfield, Ill., Nov. 20.—The Duquette Company, of Chicago, has increased its capital stock from $10,000 to $12,000.

William Ottott, formerly of Bondfield, who recently engaged in the sand business at Kankakee, has had a new office building erected at Fifth avenue.

Lem Lawrence, of Alton, has taken charge of the sand and gravel pits on the Culp farm, two miles from Bethalto, and will do a retail and wholesale business.

J. H. Bale, of Charleston, was awarded the contract for two miles of gravel road near that city for $1.18 and 90 cents a yard respectively.

Fire November 2 destroyed the dredge boat house at the plant of the Lincoln Sand & Gravel Company of Lincoln, tying up work for four days and causing a loss of $300.

L. J. Danforth has opened a new sand and gravel pit at Washington.

The Peoria Washed Sand & Gravel Company, of Peoria, is planning a new gravel washing and screening plant on the east side of the Illinois river, across from the city of Peoria. The plans for the plant are being drawn by Raymond W. Dull & Company, of Aurora, Ill., and will constitute a five bin plant which will give the firm three grades of gravel and two grades of sand. The oversize material will be crushed and then passed over the screens with the gravel. The company owns a forty-acre pit on the outskirts of Chillicothe and barges will be used for its transportation upon the Illinois river. The company is at present furnishing gravel for the new Chicago and Northwestern railroad bridge across the Illinois river, below Pekin, and the Boss Manufacturing Company's new concrete factory building in Peoria, besides Secretary D. S. Brown reports many smaller jobs about the city.

An indication of the rapid development of the state highway scheme is the recent signing of a contract by the California State Highway Commission with the Natomas Consolidated of California for about 500,000 tons of crushed rock. The rock will consist of crushed cobbles from the gold-dredging fields. The Natomas Consolidated now has three crushing plants operating on this material, one at Natoma, near Folsom, Cal., one at Fair Oaks bridge and one at Oroville, each plant having a daily capacity of 1,000 tons.

Milwaukee, Wis., Nov. 19.—The Janesville Sand & Gravel Company, of Janesville, Wis., has secured additional contracts for furnishing gravel for use in the construction of the new Wisconsin capitol building at Madison. Practically all the gravel used thus far on the capitol and about the capitol grounds has been shipped by the Janesville concern. The company is shipping out on an average of forty-two cars of gravel daily and would increase its shipments if it could secure the cars.

The Wagner Sand Company of Wagnero, Wilson county, Tex., has been incorporated with a capital stock of $10,000; incorporators, Adolph Wagner, Frank James, William L. Williams, all of San Antonio.

Cape Fear Gravel Company, Norfolk, Va., capital stock $25,000, has been incorporated; F. J. McGuire, president-general manager; S. A. McGuire, treasurer; W. W. Terry, secretary.

SAND AND GRAVEL

NATIONAL ASSOCIATION OF SAND AND GRAVEL PRODUCERS.

Meets Annually.

OFFICERS.

F. W. Renwick, Chicago Gravel Co., 343 S. Dearborn St., Chicago, Ill.....President
H. H. Halliday, Halliday Sand Co., Cairo, Ill. .....Fist Vice-President
W. F. Bradley, Ohio & Michigan Sand & Gravel Co., Toledo, Ohio.....Second Vice-President
H. F. Curtis, Lyman Sand Co., Omaha, Neb. .....Third Vice-President
Lee R. Witty, Wabash Sand & Gravel Co., Terre Haute, Ind.....Fourth Vice-President
J. J. Neary, Utica Fire Sand Co., Utica, Ill. .....Fifth Vice-President
C. H. Brand, Atwood-Davis Sand Co., Chicago, Ill.....Treasurer

C. H. Stebbins, N. C. Fisher, A. Y. Reed, ... Directors for two years

P. A. Stewart, T. E. McGrath, G. W. Bunker, ...Directors for one year

THE STANDING COMMITTEES.

C. H. Stebbins, W. F. Bradley, P. M. Lewis, Joseph Hoch, H. C. Cary, C. B. Shefler, ...Uniform Classification

P. M. Lewis, E. S. Davis, W. F. Bradley, R. Snoddy, ...Transportation

R. Snoddy, W. C. Jones, H. C. Cary, ...Co-operation

Official Organ.....Rock Products

GRAVEL ASSOCIATION MEETING.

The first annual meeting of the National Association of Sand and Gravel Producers will be held at the Auditorium Hotel in Chicago on January 16 and 17. President Renwick arranged this date as being one that would best suit all the members of the association, because it will enable them to attend the Cement Show at the Coliseum at the same time. The meeting is held at a time of the year when the members can most conveniently attend, and the officers hope for a very large attendance. A program will be arranged that will be most profitable to everybody concerned. Subjects will be discussed along trade lines, and some of the problems that confront the producers will be fully discussed. It is hoped that the committee on standardization will be able to report the National Association of Cement Users as a similar committee, and it is possible the two committees may get together in time for a report at this meeting. It behooves every member of the association to lay his plans now to be in Chicago on those dates, as the association is making progress and its success means help for everybody concerned in the production of sand and gravel.

LOUISVILLE SAND AND GRAVEL

Louisville, Ky., Nov. 19.—With good weather a feature of the greatest satisfaction to sand and gravel men of this city, all are "making hay while the sun shines" and preparing for the days when it will be impossible for any great amount of activity in their line of endeavor. To judge from the present weather, Louisville is to have an unusually mild winter, cold blasts having so far delayed their arrival. Sand and gravel men are extremely busy at present, and expect the season to last at least up to the turn of the new year, when, as a rule, the bulk of activity comes to an end until spring again makes its appearance.

Though the baseball season has come to an end and all games during the next few months will be played in the "Stove League," John M. Settle, of the Ohio River Sand & Company, has just completed a deal which has converted him into a baseball magnate, who will have his hands full during the coming winter in preparing for the spring awakening. Mr. Settle is a member of a Louisville syndicate of business men who have just taken over the Louisville franchise in the American Association. About $100,000 was involved in the deal, which has been completed. While Mr. Settle did his share toward financing the deal, he will probably continue to give all of his efforts to the sand business, leaving the active management of the Louisville club to his associates. C. A. Stout, sales manager of the Ohio River Sand Company, has assumed his duties with that concern after being confined to his residence on Sixth street for several weeks. Mr. Stout was for a time in a serious condition, but rallied nicely, and made a rapid recovery. He is now again in good health and is cleaning up accumulated desk work with his usual thoroughness and facility. The Ohio River has completed the bulk of its contracts and is now winding up the few which have not been closed. The company reported 1912 business as showing a gain over that for the preceding year, and officers of the concern are enthusiastic over 1913 prospects.

The Louisville branch of the E. T. Slider Company under the guidance of Capt. J. R. Mitchell, one of the veterans of the Louisville trade, is getting a fat share of the up-town business. The proximity of the Louisville establishment to numerous big pieces of work has made it a logical office for the rapid handling of the contracts, and Capt. Mitchell is much encouraged over his initial showing as head of the branch. The New Albany, Ind., office of the Slider Company is also doing exceptionally well, shipping heavily to French Lick, Ind., and other points where building operations necessitate the use of sand. The Louisville office has about completed big shipments to West Point, Ky., where the Fitch Construction Company has practically completed the bridge which spans Salt river at that point. About twenty car-loads have been delivered, and about ten more will complete the work, it is thought.

The completion of the cross-town line on Oak street, Louisville, marks the end of a big piece of work for Andrew Hoertz, a well known sand and gravel man of the Kentucky metropolis. The Oak-street line is one the construction of which has been agitated for several years, but which has been built only recently. The line runs from Cherokee Park to Shawnee Park, across the entire city. Mr. Hoertz provided sand and gravel for the entire line. The gravel man's leg, which was recently broken, is mending nicely, though rather slowly. Mr. Hoertz is a heavy individual and that factor is playing some part in the slow healing of the injured member. Physicians have assured him, however, that no permanent injury or incapacitation will result, and Mr. Hoertz is already getting about with the aid of a cane.

The Nugent Sand Company, holding a number of contracts for work on the streets of Louisville, is doing a big volume of business. The company easily has enough work to keep it active during the entire winter, the only drawback being the fact that the season is growing late. Robert Nugent and other officers of the company hope that the winter will be a mild one, in which case the work will be continued without a halt.

CHICAGO SAND AND GRAVEL NEWS

Chicago, Ill., November 20.—Volume of trade in the sand and gravel industry which is always large at this time of the year reached anticipations for this month. Shipments are heavy, but would be larger were it not for the shortage of cars which, while not as great as last month, is still felt keenly by shippers. Prices this month are stiffening and very firm. The demand for sand and gravel continues very active, and indications point emphatically to a large consumption of this material next year. It is said that if sand and gravel men at the opening of the coming season next spring avoid the mistakes made the forepart of this year of making low prices on season contracts, prices will rule higher and no difficulty experienced in obtaining them within reasonable limits, which will produce that margin of profit to which sand and gravel men are entitled, and which they failed to receive on account of this keen competition during the season about to close. Withal the season has been a fairly good one and would have been exceedingly satisfactory, based solely on the volume of trade.

Geo. B. Hart, secretary of the Joliet Sand & Gravel Company, said: "We always have our hands full at this time of the year, and the season, which has been one of the best in years, will close more than satisfactory. Conditions remain unchanged from those of last month, and are in every way excellent. Prices are better than they were and are firm. The car shortage, which we felt seriously last month, is getting a little better, but is still bothering us. The volume of trade is large and the demand for sand and gravel will remain active till everything freezes up. There is a great deal of work left over for next year and with the general prosperity of the country the outlook for 1913 is very promising."

F. M. Richardson, president of the Richardson Sand Company, said: "There is really nothing new to say about the sand and gravel trade this month. We are always busy in November, when material is rushed before everything freezes up. Prices are a little better and the car shortage, while still bothering us, is not as bad as it was in October. We are approaching the close of the season and are looking forward to an excellent business next year."

C. H. Brand, of the Atwood-Davis Sand Company, said: "The demand for sand and gravel is stiff. We are very busy, as always at this time of the year. Our shipments are heavy and would be greater but for the car shortage, which is bad.

SAND AND GRAVEL PRODUCTION.

According to the U. S. Geological Survey, the noteworthy features of the sand and gravel industry in 1911, as compared with the business of 1910, were the slight decrease in the production of building sand and gravel, the increase in the production of glass sand, and the fact that, notwithstanding the slight net decrease in total tonnage of sand and gravel produced, there was a slight increase in total value as compared with that of 1910.

The total production of sand and gravel in the United States in 1911, as reported to the United States Geological Survey, was 66,846,959 short tons, valued at $21,158,583, as compared with 69,410,436 short tons, valued at $21,037,630, in 1910, a net decrease in quantity of 2,563,477 short tons, but an increase in value of $120,953 as compared with the production of 1910. Of the 1911 total, the production of all kinds of sand was 40,253,977 short tons, valued at $14,438,500, and that of gravel was 26,592,982 short tons, valued at $6,720,083.

The production of glass sand in 1911 was 1,538,666 short tons, valued at $1,543,733, as compared with 1,461,089 short tons, valued at $1,516,711, in 1910. These figures represent an increase in quantity of 77,577 tons and in value of $27,022.

Quantity and value of sand and gravel produced in the United States, 1902–1911, in short tons.

Years.	Sand and gravel.	
	Quantity.	Value.
1902	1,847,901	[a] $1,423,614
1903	2,110,660	[a] 1,831,210
1904	10,679,728	[a] 5,748,099
1905	23,204,967	11,223,645
1906	32,932,002	12,698,208
1907	41,851,918	14,492,069
1908	37,216,044	13,270,032
1909	59,565,551	18,336,990
1910	69,410,436	21,037,630
1911	66,846,959	21,158,583

[a] Includes a very small quantity of gravel.

Lime

The National Lime Manufacturers' Association

Meets Semi-Annually

OFFICERS.

Wm. E. Carson, Riverton, Va. ..... President
King McLanahan, Hollidaysburg, Pa. ..... 1st Vice-President
H. A. Buffum, Rockland, Me. ..... 2nd Vice-President
Geo. E. Nicholson, Manistique, Mich. ..... 3rd Vice-President
F. K. Irvine, Chicago ..... Secretary
C. W. S. Cobb, St. Louis, Mo. ..... Treasurer
Wm. E. Carson, Chas. Warner, Walter Sheldon, ... Executive Committee

LIME MANUFACTURERS.

The annual meeting of the National Lime Manufacturers' Association will be held in the New Astor Hotel in New York on January 22 and 23, and promises to be the most interesting and instructive meeting in the history of the association. President Carson is busily engaged in making arrangements for the meeting, the date for which has just been decided upon. These meetings have always been of the utmost importance and interest to lime manufacturers, and the one this winter should be attended by a large number as the previous meetings have been. The program of papers and addresses will be announced later.

TO INCREASE PLANT.

The work of modernizing and increasing the capacity of the Lowell M. Palmer lime plant, West York, Pa., is progressing rapidly and the erection of the large kiln building is fast nearing completion.

The plant of the Alabama Portland Cement & Lime Company, located at Spocari, Ala., will be enlarged. Among the added equipments will be the installation of a kiln 175 feet long by ten feet in diameter.

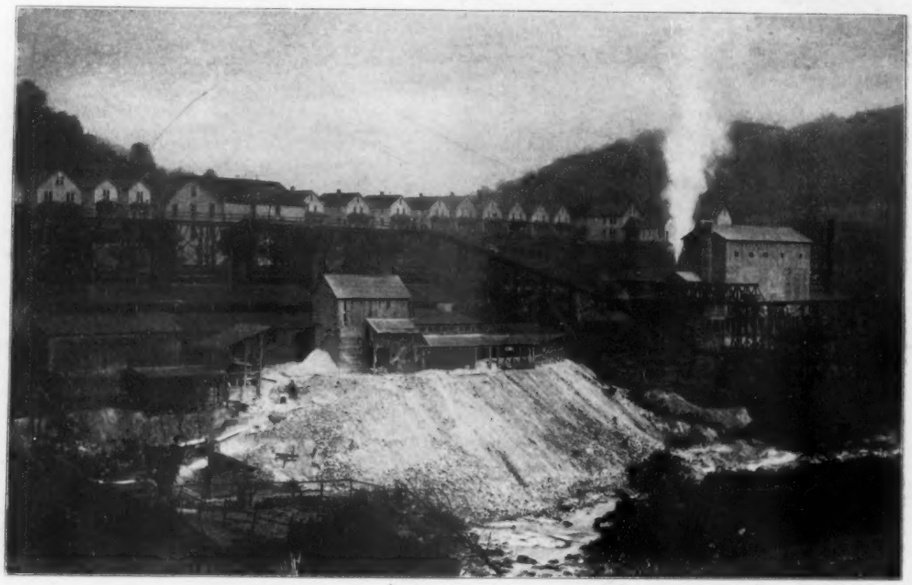
Articles of incorporation were filed recently for the Cascade Lime Company, Pittsburgh, Pa., to mine for limestone, to erect buildings for the production of lime and other minerals; capital stock, $5,000. Incorporators: F. C. Pearson, Pittsburgh; B. W. Adkins, Lawrence J. S. Topper, Williamsport, Pa.

John W. Dougherty and J. B. Lloyd are perfecting arrangements for establishing a big lime plant near Valley, Kan. The firm owns a tract of 480 acres, which embraces a mountain of limestone of the finest grade and from which in recent years shipments have been made aggregating many hundred of tons. The plant will be in working order some time during the year.

Application was made recently for a charter for the Rock Point Limestone Company, Rock Point, Pa., and arrangements have been made to start operations as soon as the charter is secured. Among the incorporators are Harry M. Wirsing, of New Castle, and other local men, together with E. J. House, of Pittsburgh, and Dwight Thompson, of New Brighton. The quarries which will be opened are located at the Rock Point station on the B. & O. railroad.

The Pittsburgh Limestone Company, which is operating quarries in Bradys Bend township, Armstrong county, Pa., has outlined plans for spending $100,000 in improvements on its property, consisting of machinery and buildings. The ravine between the two "workings" being developed will be bridged by a trestle and the capacity largely increased. The company now has a large daily tonnage, and when the improvements contemplated are finished this will be greatly increased.

The new plant of the Duck Run Lime Company at Newton, Pa., was started recently. Capt. M. S. Marquis, of New Castle, is one of the heaviest stockholders. The machinery is all of modern design and the plant is strictly up to date in every way. Limestone is quarried from giant quarries in the rear of the plant 200 feet away. The plant is operated by electricity and the product will be hauled away by the Harmony company, which has installed a sidetrack from their main line.



TRESTLE POWER PLANT AND MINERS' HOUSE AT T. K. MORRIS' PLANT, WINFIELD, PA.

LIME PRODUCTION

Nearly Three and a Half Million Tons Burned in 1911 for Farm Use

The production of lime in the United States in 1911, according to a report by Ernest F. Burchard, just issued by the United States Geological Survey, was 3,392,915 short tons, valued at $13,689,054, as compared with 3,505,954 short tons, valued at $14,088,039, in 1910. This represents a decrease in quantity of 113,039 tons and in value of $398,985. The average price a ton in 1911 was $4.03, as compared with $4.02 in 1910, an increase of 1 cent a ton. The total number of producers reporting in 1911 was 1,089, as compared with 1,126 in 1910, a decrease of 38. This decrease in the number of producers was due partly to the inactivity of small kilns operated by farmers for burning lime for local use as a soil stimulant and partly to the tendency of the industry toward concentration of plants into fewer and larger units. The heaviest decrease in number of producers was in Pennsylvania, West Virginia and Wisconsin. A few states, among them Texas and Washington, showed an increase in the number of producers. In 1911, 44 states, including Hawaii and Porto Rico, reported the production of lime; in 1910 lime was produced in 43 states.

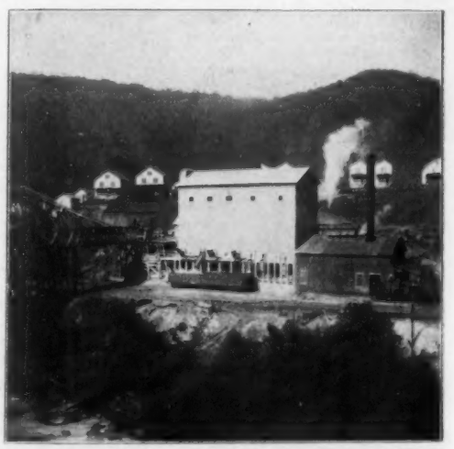
ENTRANCE TO STONE MINE, MORRIS PLANT.

The five leading states in 1911 were, in the order of production, Pennsylvania, Ohio, Wisconsin, West Virginia and Missouri. Pennsylvania produced 841,723 short tons, valued at $2,688,374, the average price being $3.19 a ton. There were 551 active producers in Pennsylvania, including farmers who produced only a few hundred bushels each for fertilizer. The Pennsylvania production represented a decrease in quantity of 35,991 short tons, but an increase in value of $248,024, as compared with 1910, the price increasing 41 cents a ton. In Ohio 405,562 short tons were reported in 1911, valued at $1,607,524, a decrease in quantity of 9,723 short tons and in value of $39,811. In 1911 Wisconsin produced 250,638 short tons, made from native rock, valued at $961,558, besides some lime burned from stone imported from other states. The stone imported from other states was mainly high-calcium limestone, the lime from which was used by beet-sugar refiners. West Virginia produced 179,966 short tons of lime in 1911, valued at $536,660, an increase in quantity of 89,547 tons and in value of $262,455. In 1911 Missouri produced 158,368 short tons of lime, valued at $722,563, a decrease as compared with 1910 of 21,182 tons in quantity and of $123,560 in value.

The production of hydrated lime in 1911 was 304,593 short tons, valued at $1,372,057, an average price of $4.50 a ton, as compared with 320,819 short tons, valued at $1,288,789, or an average price of $4.02 a ton, in 1910.

Lime is one of our practically inexhaustible natural resources. The available limestone rock widely distributed over the United States can not be estimated even in millions or billions of tons. It is a fact also that the more lime is "thrown away"—scattered over the ground—the better it is for the country, for lime is a great soil renovator, and although it is believed to have no actual fertilizing value in the sense of being in itself a plant food, it is well known that spreading it upon the fields and plowing it under makes many soils more productive by "sweetening" them and rendering available the plant food they already contain. Lime has also a great variety of other highly important uses—in fact, few mineral products have so wide a scope of usefulness.

A little more than half the lime manufactured in the United States is used as structural material—in lime mortars, Portland cement mortars, concrete, gypsum plasters and whitewash. Large quantities



GRINDING PLANT AT MORRIS LIMESTONE MINE.

LOUISVILLE LIME NEWS

Louisville, Ky., Nov. 19.—Though the regular lime season, as it is known at present, is rapidly drawing to a close, a few enterprising members of the trade in Kentucky are introducing lime as a fertilizing material with good results. One such concern is the Webster Stone Company, of Irvington, Ky. The concern now has about 400 tons of ground lime to be shipped to various points at once for use as a fertilizer. Lime for this use has several points in its favor. Compared with other materials used for the same purpose, it is cheap, while advocates of lime assert that it is superior to other material in accomplishing its work. Agriculturists are taking hold of lime readily and fall sales are the heaviest in the past several years with the Webster Stone Company, which is boosting the proposition consistently.

SAN FRANCISCO LIME NEWS

San Francisco, Cal., Nov. 16.—The San Juan Portland Cement Company is now having plans drawn for large lime kilns and a hydrating plant. J. C. Kemp, Van Ee, the general manager, with headquarters in the Crocker building, this city, is now on the site at San Juan, Cal., looking after preliminary details of the installation. The machinery for the cement mill has been on the ground for some time, and it is announced that this will be installed within the next six months.

W. S. McLean, of the Holmes Lime Company, states that the company is still oversold on its Diamond brand finishing lime, while the Santa Cruz brick lime is in steady demand. In regard to hydrated lime, he says: "We are now furnishing 450 tons of our Vigorite brand hydrated lime to be used in conjunction with concrete on the basis of 10 per cent to the amount of Portland cement, for a large irrigation project being carried out by the South San Joaquin and Oakdale irrigation districts. The use of this quantity of our Vigorite brand hydrated lime speaks volumes for its efficiency and economy in waterproofing concrete." The irrigation work mentioned includes a dam across the Stanislaus river at Knight's Ferry, and a concrete flume to carry the water thence to the districts around Oakdale, Cal. The dam is 78 feet high and 135 feet long, costing $175,000, and will hold in storage 100,000 acre-feet of water. The flume, which is being built by the Utah Construction Company, this city, will distribute water to each 40-acre tract in the districts. Edwin Duryea, Jr., chief engineer of the irrigation districts, has supervision of all details of the work.

NEW YORK LIME NEWS

New York, Nov. 20.—Trading in lime was very brisk during the past month in the local market. Dealers report that a steady demand has been noted of late and are confident that it will continue far into the winter months. Prices have ruled steady. Contractors are rushing work to finish their jobs and have started indoor work lately. Collections are somewhat easier. The building plans filed during October in New York City have shown a gain of 83¼ per cent as compared with October, 1911. There are many indications that business will be very good next spring.

J. A. Curtin, of the Farnham-Cheshire Company, stated: "Business has been very good with us during the past month and it looks as though the demand will continue much later this season than usual. Prices have been maintained and are stiff. There is a large amount of work being finished up at present and contractors have started inside work. We are quoting in carlots for finishing lime, 300-pound barrel, $1.55, and common lime, $1.25 per 300-pound barrel."

At the offices of the Kelly Island Lime Company it was stated the demand for lime has been very strong of late. They have been unable to supply the demand on account of the car shortage, which has delayed shipments of lime to the East. Prices are steady. The amount of business on hand will keep them busy for the balance of the year at least.

Foster F. Comstock, president of the Comstock Lime and Cement Company, added: "The call for lime continued to be of good proportions during the past month, and from present indications the same conditions promise to prevail during the balance of the year. The brisk demand has kept prices steady. Conditions have improved considerably since last spring and are much better than this time last year. The outlook for building operations during next year are very bright indeed."

The Capital Stone & Lime Company, Harrisburg, Pa., has been chartered with a capital of $5,000. The incorporators are B. B. Blough, W. R. Blough and B. N. Herman, all of Harrisburg.

A NEW FIELD FOR ROOFING PAPER

By G. D. Crain, Jr.

Manufacturers of and dealers in roofing papers have maintained from the beginning of their business, and with reason, that their goods marked a distinct advance in the science of building. Their efforts have resulted in the almost exclusive use of manufactured sheet roofings of various sorts on modern factory buildings, store buildings and office buildings in the larger cities and towns, especially, all over the country. Their advertising is directed largely at this class of consumers; but it does not seem to have occurred to many handlers of roofings that the farmer is one of the very best prospects on the list.

There are several causes which combine to make this true. Agriculturists in nearly every section have prospered during the past few years, despite the pessimistic wail of hard times and high taxes from the rapidly-disappearing "hill-billy" type. Where one crop has been a failure, a bountiful yield of some other product has usually enabled the farmer to declare a dividend on the year's work, for diversification has become the cornerstone of the modern farm. Banks have always realized that the farmer, above all men, is worthy of their support, not to mention the incidental fact that they couldn't do business without him; and almost any tiller of the soil can borrow enough without trouble to tide him over the occasional rough spots. But the mortgage on the old homestead is not as universal a piece of property in the rural drama as it used to be, by any means. Mortgages have gone out of fashion, and big red barns have become the rage.

It is a literal fact, which any observer can verify, and which can be accounted for only by the steadily mounting prosperity of the farming element as a class, that the average farmer is building more and more substantially when he erects improvements. Once upon a time the agriculturist was satisfied with disgracefully ramshackle structures, as long as they could stand and afford some sort of pretense of shelter. With the coming of greater prosperity, however, the attitude has changed, and the progressive farmer is becoming more particular in his tastes in outbuildings. He realizes the incompatibility between his shining new automobile and the rickety lean-to that was good enough for the rusty old family carryall.

When he discarded cowhide boots, he acquired a dislike for plowing around in his staggering barn in stable-muck six inches deep, even now and then; and with the desire for a better personal appearance which arose in the younger generation with the means to gratify it, he became conscious of the eyesores on the landscape formed by unpainted, poorly constructed farm buildings, with warped shingles which were the sport of every gale.

Incidentally the modern farmer conducts his business like a business man; and he knows that to house work-stock and costly implements under the inadequate protection of leaky shingles or archaic thatches is the poorest sort of business. Why not tell him, then, of the advantages which lie in the use of roofing paper, easily put in place, requiring practically no repairs, absolutely impervious to the weather?

The greatest feature of this sort of roofing material to the farmer, and that over which those who have adopted it are most enthusiastic, is perhaps that first mentioned — the simplicity of its application. Labor has always been difficult to procure on the farm, especially skilled labor; and while the day has long passed when everything, from shoes to hats, was made on the farm, the farmer is still required to be a good deal of a jack-of-all-trades. He usually builds his own out-houses, save in exceptional cases, with the help of his hired man and sometimes of a neighbor or two. Despite the universal use of modern agricultural implements, work is always pressing when it is possible to work at all; and if it had no other advantage, roofing paper would be welcomed by the harassed farmer with open arms when he is shown that all he has to do is to unroll it and tack it on the roof, instead of following the slow and painful processes required by the pesky shingle.

Such retailers as have realized that the country districts presented the greatest possibilities for the sale of prepared roofings have been confronted at the outset with the difficulty of reaching the consumer, in order to inform him that he was a consumer, in the section where cornshocks dot the scenery instead of policemen, and the chirp of the cricket replaces the click of the ticker. A dealer in an Ohio Valley city, however, after many experiments, reached the conclusion that the expedient of circularizing, while somewhat damaged by overwork, may still be made valuable, if intelligently done and followed up by personal work by a salesman.

"Circulars have been worked to death among the farmers, I know," acknowledged this dealer in roofing paper. "But still, there is a good chance for them to talk to the rural citizens, if you go about it right. You must take it into consideration, though, in preparing your circular, that he is no longer the chin-whiskered hick, with a straw behind his ear, such as you find in the comic papers and on the vaudeville stage, and nowhere else. I would say without reservation that fully as much care must be devoted to your circulars for this purpose as if they were going to alert business men in the cities. Conditions have changed on the farm, and the farmer has changed with them. He used to get one circular a week, and he wolud read it a dozen times, with all the reverent attention of a letter from home. He also received the weekly newspaper from the county seat on Friday, and it formed his sole reading matter for the ensuing week.

"But no more. Mail is now delivered, except in the most isolated districts, three or four times a day on the R. F. D. routes. Each delivery brings to the farmer not one, but several circulars, for the farmer is on the mailing lists of all sorts of houses; he gets at least one daily paper, and his personal mail is not small. Therefore, if you want

your circular read, make it short, make it business-like, and make it hit the farmer right between the eyes in a way that will impress your proposition on his memory. In other words, make your circular such a circular as you would use in an other selling compaign.''

This particular dealer, in verifying his theory regarding the possibility of interesting the farmers in the counties comprising his territory, first secured a mailing-list by the simple expedient of asking a tobacco man for it. The tobacco buyer had put men on the road in these counties for this purpose, and each man got the name and address of every farmer in the territory covered by him. The dealer was not altogether satisfied with the list, however, and completed it by consulting the tax-lists, from which he compiled an absolutely reliable list containing the name of every farmer in his field. The circulars, prepared along lines which the dealer believed would do the work, short, terse, convincing, were then sent out, explaining the desire of the dealer to establish business relations with the farmer, and why.

''Our Mr. Blank will call shortly,'' ended the letter.

Mr. Blank, representing the dealer, did call. He found that the missives, by virtue of their originality, had been read, and in many cases, most frequently where the recipient was considering building or repairing his outhouses, had been kept for reference. Mr. Blank was, of course, a real salesman. He knew why roofing paper was better than the other materials used from time immemorial on the farm, and he knew wherein his line surpassed others, in cases where this question was raised; and on these matters he was not reticent. And, working in an almost virgin field, he closed many sales that day and in the days that followed, while incidentally interesting even those who did not buy almost to the extent of complete conversion to roofing paper as against shingles, straw or tin.

It may be remarked here that the personal touch was the final blow of the hammer that drives the nail deep into the wood, in this as in other cases where it is properly utilized. It was the connecting link between prospect and sale, and it connected. The dealer sent out no less than 5,000 circulars; and out of that number, a big percentage of sales were developed, while the live prospects discovered ran away up into the hundreds. As a result, this dealer, while admitting the defect of the circular campaign when used alone, is enthusiastic over its possibilities when used as a forerunner of an expert salesman. And the mailing-list built up in this highly successful experiment couldn't now be bought from this dealer for love or money.

One of the more or less timeworn, but always useful, devices used in this circular was the emphatic assertion, following a definite proposition, ''This offer is good for exactly thirty days.'' The salesman following up reiterated this statement, and embroidered and emphasized and played upon it.

''Of course we can't sell at that figure forever,'' said he to the agriculturist. ''We are making this price only to introduce our roofing around here, and if you want it, as of course you do, you've got to talk and act quick.''

And the farmer, already convinced by the circular and the salesman of the desirability of the goods offered, and hesitating in the balance between buying and not buying, usually decided to save the difference and take advantage of the opportunity at once.

It should be added, in this connection, that the price quoted for the purposes of this campaign was actually a little lower than the usual retail price of the goods; for any other plan would have inevitably worked to the prejudice of future sales. And, further, it should be observed that the roofing was good roofing—another essential to the building up of customers, as opposed to the old-fashioned piratical plan of making a single sale, skinning the customer down to the blood, and then fading from view. It would be a fatal mistake for a dealer who expected to do more business in his territory to do so under a general policy of cutting prices, or to attempt to unload on the customer roofing that would not do the work.

With proper care in these respects, however, and with energetic and able following-up of the circular, there is no reason why any dealer in a prosperous farming country should not meet with success in such a campaign proportionate exactly to his efforts; and better still, the educational effects of the sales actually made, and of the salesman's talks even where sales did not result, will be found without fail to result in business, and then more business. The farmers who buy and try will, presumably, be satisfied, and proud to tell their more conservative neighbors of the success of the experiment; and the next time that neighbor builds a barn or a carriage-house or a chicken-coop he will cover it with that particular brand of roofing.

LIMESTONE FERTILIZER.

The utter absurdity of the idea that the use of a ton or two of limestone per acre may injure the soil becomes at once apparent when it is recalled that limestone soils are world famous for their fertility, and have been for generations. The real trouble with some soils which are said to have been injured by the use of lime is lack of organic matter and nitrogen as much as anything else.

This lack of organic matter and nitrogen is traceable, in both cases, mainly to poor rotations or none at all, poor care of manure or the production of an insufficient amount, and burning or selling straw and stover, and the final results seem to have been largely independent of the use or nonuse of lime. This statement must not be taken to mean that lime never exerts an unfavorable effect, but rather that a good part of the unfavorable effect generally attributed to it is in reality due to poor methods of farming.

Lime is simply made a convenient excuse, a scapegoat, just as is commercial fertilizer in certain sections, and with no more reason.

Where farmers this year, that is, under the conditions that have ordinarily prevailed this year in the corn belt and east, have failed to secure a good growth of clover, they have reason to suspect that the trouble is not in the seed or the season, but in the soil; in short, that the soil is acid. If they find sorrel growing luxuriantly on the land, they have greater reason to suspect it. In this matter there is no need of going on suspicion. Get five cents' worth, or two cents' worth, or one cent's worth, of blue litmus paper. Make a ball of moist dirt, or fill a cigar box or a tin can or any other old thing with dirt, moisten it, make a slit in it with your jack-knife, slip in a piece of the litmus paper, and press the soil together. In the course of a few hours examine it. The greater the change in the color of the litmus paper from blue to red, the greater the acidity of the soil.

What then? Why, ground limestone, of course; two to four tons to the acre. In many sections, farmers understand this. The owners of limestone quarries understand it, and get it out on the market at perhaps a dollar and a quarter a ton at the crusher, and coal rates by rail.

Ground limestone may be applied at any time and in any way.

Sooner or later we shall have to apply lime, and the soils that will need it most are what are known as limestone soils, paradoxical as it may appear. At any rate, it is on these soils that the best results were secured a generation ago.

FINISHING OF INTERIOR WALLS.

A new field for the finer building materials has been opened by big increases in the number of the more artistic and substantial private residences which now make up a good portion of modern building operations. A few materials of marked superiority over those commonly used in small construction work were until recently used only on large store and office buildings, hotels and buildings of a public nature. Today these better materials are finding a large market in the construction of fine homes.

One of these superior materials which has found this new field is Best Bros. Keene's Cement for inner walls. Most architects and contractors who design and build large structures have long known the advantages of this material for interior wall finishing. It was used for the interior of what is probably the finest office building in the world from an architectural viewpoint—the Senate Office Building at Washington, D. C.—and is being used in a number of the new government buildings.

Best Bros. Keene's Cement is used in the finest bank buildings, office buildings, department stores, apartment houses and public buildings of almost every large city.

It has long been recognized by the makers of Best Bros. Keene's Cement that a field even larger than that offered by big construction work awaited the product in the building of fine homes. Not until the past few years, however, has it been generally adopted by architects and contractors for this use. Its adoption for the interior walls of the smaller homes of artistic design came only after it had been used in those palatial residence buildings which are landmarks in every large city.

During the past four years the increase in sales of Best Bros. Keene's Cement among contractors and builders of the better sort of small residences has been phenomenal. Hundreds of architects now specify it wherever substantial work is desired. It is now shipped in large quantities to all parts of the country and the increasing demand for the product has made necessary large extensions in the factories. It is rapidly displacing the old easily-broken and unsatisfactory plaster in all kinds of interior construction.

The qualities which makes Best Bros. Keene's Cement different from common plaster are its strength and the ease with which it is retempered. It gives a hard surface, backed by an equally hard foundation. It turns away blows which would penetrate and destroy ordinary plaster, and abrasions from the impact of furniture are practically unknown. There never has been discovered any other material suitable for interior plastering which possesses the strength of Best Bros. Keene's Cement.

Keene's Cement can be retempered, or worked over, without impairing its effectiveness. In applying a finish coat of ordinary plaster, a small area only can be covered at one application owing to the rapidity with which ordinary plaster sets. Keene's Cement is slow setting material, and large areas can be covered at one time. This does away with numerous joinings in the finish coat.

Every form of decorative treatment is possible with best reuslts when Keene's Cement is used. The material is devoid of free chemicals, and the most delicate color schemes can be applied on its surface without danger of stains or fading. Painting or enameling produces a wall that can be cleaned with a damp cloth, bringing out the original colors in all their freshness. Keene's Cement is used for making the capitals, mouldings and other decorative pieces that enrich so many interiors of our more pretentious public buildings.

Keene's Cement is of strictly mineral composition. It contains none of the animal or vegetable retardents too often used in common plasters. It is sanitary, and is used for the construction of hospitals and infirmaries where the best sanitary qualities are demanded. It can be sterilized with ease, and there is no dust or particles of plaster to be dislodged. It stands the hard service given walls in hospitals and other buildings. From every viewpoint, no better material for interior walls is made.

Because of these unmatched qualities, Best Bros. Keene's Cement is gaining ground rapidly among builders of fine houses, bungalows, schools, hospitals, churches, country clubs and every type of building operation. It has been used widely during the past twenty years for interior walls on large construction work. The new field now being sought by Best Bros. Keene's Cement brings this splendid material to the doors of contractors and builders who demand the best in interior finishing. An artistic book, containing lists and pictures of some of the prominent buildings in which Best Bros. Keane's Cement was used may be had free. Write to the Best Bros. Keene's Cement Co., Medicine Lodge, Kansas.

The Eagle Point Lime Works, of Dubuque, Iowa, reports business very good this season and has been and is yet behind in its orders for lime and crushed stone. The Fengler brothers have other interests in the west which takes quite a bit of their time and they contemplate disposing of their interest at Dubuque so they can give their entire attention to their other work.

Fla., Kendrick—Lime—A. N. Blowers of Pineville, Ky., organized company to establish lime works: install rotary dydrating machine.

Harlem Valley Lime Co., Dover.—Deal in lime, stone, etc.; cap., $50,000. Incorporators: J. Hilton, L. J. Schuyler, A. T. Rowe, New York City.

William Houpt has purchased the stock of the Builders' Supply Company at 207 South street, Danville, and the corporation has been dissolved, but he will continue to operate the business under the same name.

The Star Builders' Supply & Manufacturing Company, Lancaster, Ohio, building supplies and manufacturing concrete products, have been incorporated; $25,000; George M. Morris, William F. O'Gara, H. F. Henry, H. B. Cunningham and C. V. Baker.

Home Builders' Supply Company, Camden, S. C., capital stock $5,000, has been incorporated by F. E. Brooks, James De Loache and C. W. Burr.

ILLINOIS RETAILERS

Springfield, Ill., Nov. 20.—The National Drain and Tile Company, of Terre Haute, Ind., was awarded the contract for material in the Gar Creek Drainage District, near Kankakee, which will amount to about $45,000. Among the other bidders were the Kankakee Tile and Brick Company, of Kankakee, and the Kankakee Cement Tile and Products Company.

LOUISVILLE PLASTER NEWS

Louisville, Ky., Nov. 19.—The wall plaster trade in Louisville has remained uniformly good, despite the fact that building permits for the city for the month of October showed a slight falling off as compared to the same period in 1911. The total value of the building permits issued during October were 522,625, against 632,915 for the same month in 1911. A year ago, however, was one of the best in the history of the trade in the Kentucky metropolis and a still greater decrease in operations could be sustained without great injury to wall plaster men of the city. The majority of the Louisville concerns have their hands full as result of the active building season of 1912, and the inactivity in new work, if such exists, has passed unnoticed.

Louisville wall plaster men are now working on numerous jobs of importance, while the smaller contracts have continued to give them a source of profitable business. Building operations at interior points also have been heavy, and 1912 will compare very favorably with 1911 in total volume of business. The mild weather which favored Louisville and Kentucky during the past month has been a source of gratification to members of the trade, though colder weather likely to appear in December, does not necessarily mean any cessation of activity. On the contrary, Louisville men are planning to continue hard work during the entire winter, and the advent of snow and low temperatures will mean merely additional caution and care. Most of the owners will provide heat for the wall plaster men, and this phase of the situation is causing little worry. Still, the late Indian summer and warm balmy days have been a feature which has created much favorable comment among members of the trade, and a continuation of present conditions would be welcomed.

The new building of the Young Men's Christian Association, which is rapidly going up at Third street and Broadway, Louisville, will shortly be ready for the Southern Wall Plaster Company, which has that contract. Lathing will begin very shortly and the Southern will devote the entire winter to putting the handsome structure in the best possible shape. The contract is one of the largest of the season, and the Southern is securing a good deal of advertising from the work, as much public interest centers in the new association home. The company is providing the plaster for numerous other small jobs and the present year promises to exceed all previous ones in volume of business.

The car shortage, which has continued to make itself a factor with many Louisville concerns, has fortunately had little effect on the business of the Kentucky Wall Plaster Company. The company is shipping rather heavily to various points in Kentucky, where building work is going on, and has had little difficulty in securing transportation service. Business is holding up nicely, according to officers of the company, and the present season is a bit ahead of last year.

Numerous small jobs are keeping the Atlas Wall Plaster Company too busy to stray from the straight and narrow path. While big contracts have been lacking, the numerous smaller ones have more than made up for this feature of the situation.

SAN FRANCISCO PLASTER NEWS

San Francisco, Cal., Nov. 16, 1912.—W. S. McLean, of the Holmes Lime Company, said recently: "Many large buildings in San Francisco are still being plastered with lime mortar, owing to the belief of many architects that it is the most reliable material for long and continued wear. We have furnished on single jobs 1,500 to 2,000 bbls., the only gypsum used being a small quantity for finishing. Our Diamond brand lime is now being used in plastering the Samuel Knight building, on O'Farrell street."

The Acme Cement Plaster Company, of St. Louis, Mo., which has been working for some time on the installation of a large 4-kettle gypsum plant on the Snake river, near the boundary of Oregon, Washington and Idaho, is still further extending its operations on the Coast. It is now reported that this company has taken a lease on the mill and mineral deposits of the Sunset Plaster Company, which started up a few months ago at Fillmore, Cal. Additional machinery is now on the way to develop this plant on quite a large scale.

Lyden & Bichel have taken the plastering contract for the new concrete building of the Sharon Estate Company, at Jessie and Annie streets, in the rear of the Palace Hotel, for $7,600.

SAN FRANCISCO CLAY NEWS

San Francisco, Cal., Nov. 16.—This is probably the first year on record in which there has been no price-cutting in the local common brick market. It has been difficult to prevent the usual over-production, but the year is nearing an end with no very burdensome accumulations, and the price is still steadily maintained at $7.50 per thousand.

The Ione Fire Brick Company's plant at Ione, Cal., rebuilt last winter, is still in operation, and has a large accumulation of green brick to be burned during the winter. Everything but the kilns will be closed when the heavy rains begin. The Holmes Lime Company, which handles much of the Ione brick, fire clay, etc., in the local market, reports a normal demand.

The Vallejo Brick & Tile Company reports a good demand for both sewer and paving brick, having just taken a large order for the latter to be used by an improvement company in opening up a new tract in this city. Paving brick has had a hard time to get a foothold in this city in competition with basalt blocks and asphalt, but steady hammering by local and Seattle concerns has brought an opportunity for a little test work in the downtown streets.

LOUISVILLE CLAY NEWS

Louisville, Nov. 19.—Brick is still maintaining its popularity with the local public and material is in sufficiently good demand to insure a brisk winter for Louisville members of that trade. Though October did not reach the pinnacle attained by the same month in the previous year in volume of building operations, Louisville brick men assert that even a larger percentage of the work done has called for brick construction than ever before. Building permits taken out during the month just past approximated a half million dollars, which is a healthy figure, and one which allows no ground for complaint from the building trade.

The fact that the totals for October fell short of the figures for the same period in 1911 caused no concern to brick men of Louisville, who assert that 1912 as a whole will range even with the previous year, which was a banner one, unparalleled in the history of Louisville, Even should 1912 fall below the figures for the preceding year, brick men will be satisfied. Contracts of importance have continued to come in and the brick trade of the Kentucky metropolis is experiencing one of the best years of its career. In fact, trade is so good that an actual shortage of brick exists.

CLAY IN ILLINOIS

Springfield, Ill., Nov. 20.—The plant of the Western Brick Works, at Danville, was recently inspected by a class from the Washington public school.

The Inland Clay Products Company, of Chicago, has been incorporated with a capital stock of $5,000, to manufacture and deal in clay products. The incorporators are Henry Burkholder, John W. Voorhees and J. W. Ware.

The Sanitary Brick Company, of Chicago, has been incorporated with a capital stock of $50,000, to manufacture and deal in brick and clay and their products. The incorporators are Henry Lutzenkirchen, James McAndrews and Albert Sabath.

All Springfield stockholders except Edward D. Keys and Logan Hay, who hold $15,000 worth of stock, have disposed of their interest in the Springfield Paving Brick Company to C. J. Armstrong, of Bloomington, for $85,000. Following the election of a new board of directors, Mr. Armstrong, assisted by Peter Henderson, of Bloomington, will take charge of the plant, and the working force will be increased and improvements at the factory will be made.

The High Ridge Hydraulic Pressed Brick Company, of Chicago, has been dissolved.

A new building code is proposed in Decatur. The committee appointed by the mayor includes J. A. Corbett, builder; W. McDonald, of Cope & McDonald, contractors, and W. M. Wood, architectural engineer.

A. Carl Gauen, of Peers & Gauen, retailers of Collinsville, is president of the Collinsville Improvement Associaiton.

PITTSBURGH CLAY NEWS.

Pittsburgh, Pa., Nov. 20.—The Pittsburgh Tile Manufacturing Company fired its first kiln at its East Liverpool plant two weeks ago. This is one of the new industries of the Pittsburgh district and is headed by E. D. Lippincott, formerly well-known brick manufacturer of this city. The company has a capital of $50,000 and the following officers: E. D. Lippincott, president; Wallace K. Miller, treasurer; Robert R. Leach, R. L. Thompson, Nelson Wilson and Arthur L. Over, all of Ben Avon, Pa., and Jesse T. Smith, East End, East Liverpool, O. It will employ 30 men.

The Champion Brick Company is developing a splendid property between East Liverpool, Ohio, and Wellsville, Ohio, and will have one of the most modern brick-making plants in the entire upper valley of the Ohio river in the near future.

The Ashtabula Shale Brick Company recently had its big plant at Ashtabula, Ohio, inspected by officials of the L. S. & M. S. Railroad. Its manager is N. C. Ralph, and its plant, which was recently built, is one of the largest and best equipped in the middle states.

PHILADELPHIA CLAY NEWS

Philadelphia, Pa., Nov. 19.—Many cities in the interior of Pennsylvania are suffering from a brick famine. Practically all the building operations have been halted on account of this lack of material, which is due largely from the scarcity of labor and the high premium placed upon the work of unskilled men who apply at the brick plants for employment. The city of Allentown has immediate need for millions of brick and unless the material is forthcoming many office buildings and hotels which were to be erected this winter will be tied up until early spring.

The Central Brick & Pottery Company, with a capital of $500,000, has been incorporated under the laws of Delaware. Waldemar Knempffert, of New York City, is the principal incorporator.

The Physicians' and Surgeons' Hospital Association, of Wilmington, Del., has launched a plan to acquire 300,000 bricks to be used in the erection of additional quarters for the caring of charity patients, by asking the citizens of that town to buy the bricks, which will cost one cent each. The slogan of the finance committee will be "Buy a Brick."

Frank Davidheiser, brick merchant of Reading, Pa., is now in Columbus, Ohio, where he will probably purchase a brickmaking plant to be installed at Stowe. His plant at present has a daily output of 15,000 brick and the acquisition of the new plant will increase this to 30,000.

Work is progressing rapidly on the new plant of the Milton Brick plant at Milton, Pa., and excavations have been started on a culvert under the Pennsylvania railroad, through which the shale will be conveyed to the plant.

The plant of the Remmey Sons Company, Philadelphia, said to be the oldest brickmaking plant in the United States, which was recently damaged to the extent of $50,000 by fire and almost completely swept away, will be immediately rebuilt. R. H. Remmey, a member of the firm, said: "We will start the new work at once and our great force of men will not be idle but a short time. Our prospects are exceedingly good and the incoming orders will be filled from our other plant. We have many fires, but this is the worst in sixteen years."

The Bay City Brick & Tile Company, of Bay City, Texas, has been incorporated with a capital stock of $7,500. The incorporators are B. E. Norvell, J. Kinnesell and J. W. Gaines, all of Bay City.

The Brown Brick & Tile Company, of Garrison, Texas, filed an amendment to its charter to change its name to Garrison Brick & Tile Company.

The Ferris brick yard at Ferris, Texas, was destroyed by fire October 23, causing a loss of $20,000.

GOVERNMENT INCREASES ORDER.

The 5,000,000 barrels of Atlas Portland cement already supplied by that company for the construction of the Panama canal have been accepted without the rejection of a single barrel. In consequence the United States Government, to be perfectly safe, has ordered this company to supply in addition all the cement necessary to complete the work in the entire canal zone.

SAND-LIME BRICK

ANNUAL SAND-LIME MEETING.

Toronto, Can., Selected as Best Place to Hold International Meeting.

A call to members of the American Association of Manufacturers of Sand-Lime Products has been sent out by Secretary W. E. Plummer, Jr., of Buffalo, to attend the regular meeting of the association, to be held in Toronto, Canada, December 3 and 4, 1912.

THE WORCESTER SAND-LIME BRICK COMPANY.

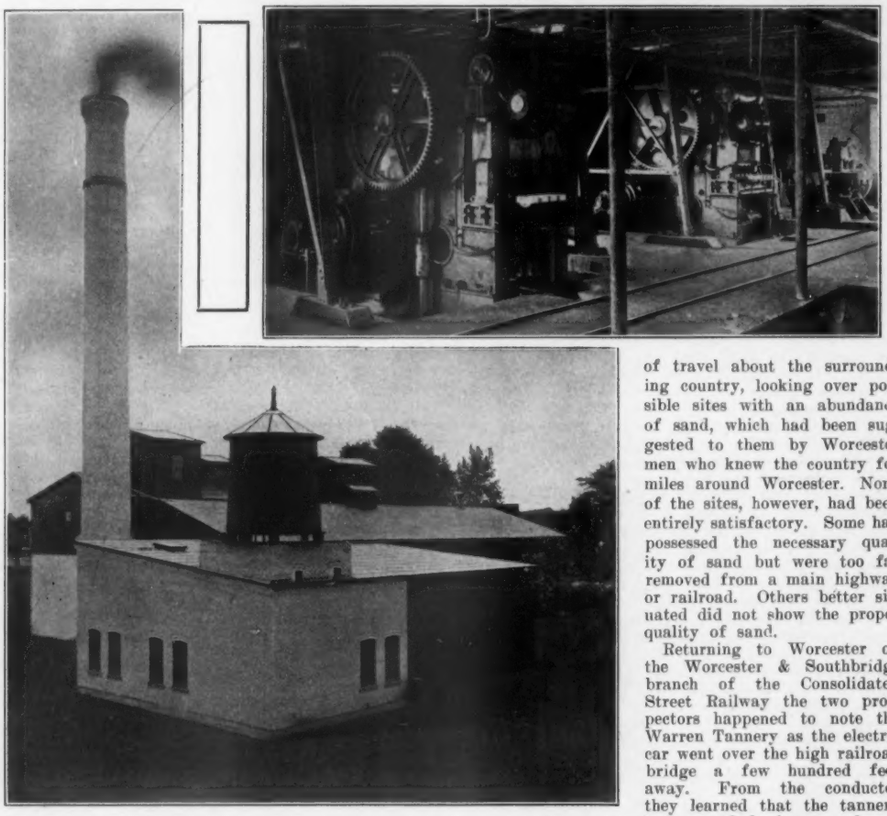
A little over eleven months ago two men stepped off an express train at Union Station. They were well dressed, energetic, and had all the ear marks of the successful business man. That they were strangers to the city of Worcester was apparent, for they bowed neither to the right nor to the left to groups of Worcester business men, well known in all parts of the city, who happened to be at the station platform waiting for a train.

These two men were Frank H. Hunter and D. E. Rogers of Hartford, Conn., vice-president and treasurer, respectively, of the Connecticut Engineering & Construction Co. Both were well known in their own community and among business associates of their own and other states, but on that day they were without an acquaintance in this city and had with them as their single credential a letter of introduction from banking men of Hartford to bankers in Worcester.

They did, however, possess a real valuable piece of knowledge about Worcester, something if it did not make them permanent residents of the city would at least tie them up to this thriving community as adopted sons for some months every year thereafter. That knowledge, which by the way they have since imparted and claim has been confirmed by Worcester business men, can be summed up in a single sentence—Worcester presented an unusually attractive field for the establishment of an extensive plant for the manufacture of brick, says the Worcester Magazine.

They were so certain of that one particular that they sought no personal letter of introduction to the mass of business interests of the city. They had experts go over the field thoroughly before they decided to locate here. They knew that millions of brick were being shipped into Worcester annually. They had ascertained that there was not a real large brick making plant within forty miles of the Heart of the Commonwealth, and from previous experience they reasoned that Worcester builders would prefer to buy their brick in the home market, rather than pay the extra charges of freight shipments which they had faced in years gone by. Furthermore, they were going to make the comparatively new process product—the sand-lime brick—which they claim has many superior qualities over the old-fashioned product commonly known as "red brick."

With these various facts at their command, and possessed of an abundance of New England grit and perseverance, they commenced the task of picking a suitable site for a plant, and organizing a sand-lime brick company here in Worcester.



SHOWING A PORTION OF THE PLANT OF THE WORCESTER SAND LIME BRICK CO. AND THE TWO BRICK PRESSES, WITH A CAPACITY OF 20,000 EACH DAILY.

How well they succeeded is apparent, for there stands to-day, ready for business, on the site of the old Warren Tannery at West Auburn, six miles from City Hall, a modern brick making plant, with a capacity of 40,000 bricks in ten hours, representing an initial outlay of more than $60,000, and back of which is a $150,000 Massachusetts corporation, The Worcester Sand-Lime Brick Company, a majority of whose stockholders and officers are Worcester business men.

This, in brief, is the history of the organizing of the Worcester Sand-Lime Brick Company and, while many of the details would provide interesting reading if space permitted, the picking of the Warren Tannery and adjacent property as a site is too interesting to let go by without telling the whole story.

It sounds like a tale of the Forty-Niners and prospecting in the days of the gold craze in the West, and Mr. Hunter and Mr. Rogers attribute what they term their "luckiest strike" to the same goddess of fortune which directed the grizzled miners to a California bonanza. It came a few weeks after they had located and got acquainted in Worcester, and at the close of a day of travel about the surrounding country, looking over possible sites with an abundance of sand, which had been suggested to them by Worcester men who knew the country for miles around Worcester. None of the sites, however, had been entirely satisfactory. Some had possessed the necessary quality of sand but were too far removed from a main highway or railroad. Others better situated did not show the proper quality of sand.

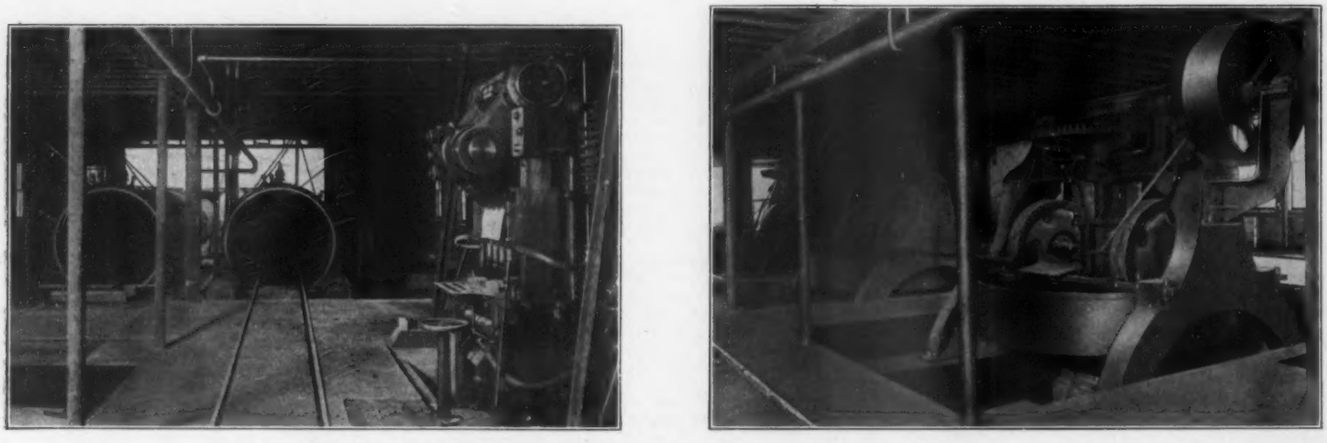
Returning to Worcester on the Worcester & Southbridge branch of the Consolidated Street Railway the two prospectors happened to note the Warren Tannery as the electric car went over the high railroad bridge a few hundred feet away. From the conductor they learned that the tannery had ceased business, and out of curiosity more than anything else they alighted at the nearest stop and proceeded to look over the property. Naturally, the first thing they sought was sand, and they found it. It was there in such quantity that they couldn't miss it. Everywhere sods had been removed the sand was ankle deep and of that clean kind which showed, even without analysis, a high percentage of silica, a fundamental factor in the manufacture of sand-lime brick.

The next morning, bright and early, the two prospectors went over the ground again, taking samples here and there in the many acres about the old tannery. Prying under sod and tangled growths they found it in abundance, entirely free from clay and to their trained eyes fairly reeking with silicate.

Tests of their samples more than confirmed their predictions. The sand averaged 97 per cent silicate, the best analysis encountered in New England, and almost without precedent in the East. It was absolutely ideal for the purpose.

Further tests, all made quietly, by the way, showed the sand to run 30 feet deep in many places about the property, deposits which began back thousands of years ago when the glaciated area of this globe commenced to recede toward the Arctic Circles.

The quality of the sand alone would have been



MASSIVE MACHINES AT THE PLANT OF THE WORCESTER SAND LIME BRICK CO.

enough to have decided the experts on the Warren Tannery location, but with the property bounded on one side by the Webster branch of the Boston & Albany Railroad, on another by a street railway line, and still another side by a State highway direct to the city of Worcester six miles away, a substantial factory building already on the site, and a brook for a water supply which has never run dry going through the property, it was their "luckiest strike."

To find such a valuable bit of property adapted for their own business was one thing. To tie it up with options was another—a bit of work which called to the limit their past experience and business ability. They succeeded in doing it in an incredibly short time. It was a matter of days instead of weeks when they had seven owners of adjoining property in the neighborhood agreed to the disposal of their long unproductive farm and scrub growth land at an excellent price for such common looking property, but for sand-lime brick purposes the price was extremely reasonable. The promoters of the business didn't wait to raise enough subscriptions in Woscester to enable them to pay spot cash for the property. Long before the options expired they had purchased, in the name of the Worcester Sand-Lime Brick Company, the twenty-five acres they had bound up, with cold cash. They took the risk of the enterprise's falling through, though neither of them called it a risk nor entertained any fear of losing their greenbacks.

From that time onward the proposed business went steadily forward. Mr. Rogers devoted his time to financing the enterprise, meeting with favor among business men of Worcester and surrounding towns, while Mr. Hunter confined his efforts to the actual work of laying plans for the proposed plant and the thousand and one details attending. Six months after the tests were made the proposition was taken before the directors of this board and endorsed.

By settling on the policy of making the corporation a purely local one the promoters got the co-operation they sought, with the result that with the exception of Mr. Hunter the entire directorate is made up of local men, as the following list will show: President, Marcus L. Foster, president of the Stone & Foster Lumber Co.; vice-president and treasurer, F. Lincoln Powers, president of the F. E. Powers Co.; directors, Frank H. Hunter, Hartford, Conn.; Charles Firth, agent of the Boston & Albany Railroad Co.; Lyman F. Gordon, president of Wyman & Gordon Co.; Edward J. Cross, president of E. J. Cross & Co.; Robert L. Prentice, real estate; and A. B. Davidson, president of the Leicester Savings Bank.

As pay for their services and work in connection with the organization of the corporation and preparation for business the Connecticut Engineering & Construction Co. received the contract for the remodeling and equipping of the Tannery property, and a nominal number of shares of common stock, whose voting power is represented in the directorate by Mr. Hunter alone.

Before giving any detailed description of the new plant and new industry for Worcester a brief history of sand-lime brick is essential. The product was introduced in this country from Germany about eighteen years ago. It had stood the test of a century in that country and, according to reports, it is in general use. Since that time the industry has been growing rapidly in this country and Canada, the first plants being established in the Middle West and rapidly extending throughout the country.

The sand-lime brick resembles Indiana sandstone, and is claimed to be, to a certain extent, a reproduction of nature's own process. Its principal difference, however, is that it has no seams or laminations

The Government's definition of the product, prepared by S. V. Peppel and published at the Government Printing Office, is contained in this summary:

"Sand-lime brick or sand brick, or the 'Kalksandstein' of the Germans, consists of sand particles which are bound together by a network of calcium silicate, or calcium-magnesium silicate, or calcium-hydro silicate that has been formed by the action of steam under pressure upon a mixture of sand or granular silicate and lime; this lime may be either a high calcium lime or a magnesium lime which has been hydrated prior to the time when the mixture is moulded into the desired form. The formation of this calcium-silicate bond is just as distinct a chemical reaction as fusion, and the result is the production of a mass in many ways similar to that produced in the dry-press brick when it is burned."

"Sand and lime hardened by the action of steam under pressure form a bond of calcium silicate which combines particle with particle by extracting enough silicate from each to satisfy the chemical affinities of the hydrated lime."

Producers of building material, like other commodities, have their arguments in favor of their own particular product over others, and the Worcester Sand-Lime Brick Company is no exception to the rule. To attempt to enumerate all of them would be a violation of the rules governing matter printed in the industrial section of the Worcester Magazine, but among the important claims made in favor of the sand-lime brick over the common clay brick are: its color, strength, fire resistant properties and the general uniformity in size and shape of each brick. The claim is made that the sand-lime brick will withstand a heat test of 3000 degrees with the only apparent damage to the cube after 96 hours in a kiln being a slight discoloration, thereby making it an excellent fire brick. Equal claim is made, on the other hand, of its resistant-to-climatic changes. The ease with which the brick can be produced in any color desired by the addition of a harmless chemical is also considered another argument in its favor.

The plant of the Worcester company is considered among the best arranged and equipped in the East. It consists of a main factory building of frame construction, 35 feet by 95 feet, two stories high; a sand screening and lime hydrating plant, 25 feet by 30 feet, three stories high, of frame and brick construction; a power house, 50 feet by 30 feet, of brick and frame construction; and a sand-lime brick stack, 85 feet high with a 42-inch flue.

A siding from the Webster branch of the Boston & Albany Railroad, 900 feet long, connects the factory with the railroad, drawing up to a newly constructed and substantial loading platform which extends nearly 200 feet on the northerly side of the building.

The arrangement of the various departments of the plant as worked out under the personal supervision of Mr. Hunter is said to contain the good features of a half-dozen similar plants erected by the company in as many years. Every department and every machine has been so located that the operation of the making of the brick is a continuous one without any unnecessary handling or moving of the product. From the time the sand is screened, the lime hydrated and the mixture set to churning in the huge mixers the operation is continuous until the finished product appears.

To effect this arrangement meant the complete remodeling and rebuilding of the tannery building proper, laying of concrete floors and the installation of steel and concrete girders.

Mining of the sand is to begin less than ten feet from the northerly side of the building, on a level with the ground floor of the plant. The cars will be run to the huge bank of sand from tracks which extend from the building. When filled they are returned to the building, transferred to an elevator and carried to the second floor, where the sand is screened and allowed to pour down into the huge mixing machines. The lime hydrating plant is close by on the second floor, on a level with the loading platform. When the lime is unloaded in barrels it is rolled into the plant directly over two absolutely fireproof lime silos of solid concrete, each with a capacity of a carload of lime. The two huge concrete vats enable the company to have a carload of lime completing hydration while the contents of the other is being used. The hydrated lime is removed to the silo on the ground floor, within five feet of the mixing machines. This particular building of the plant is entirely new, and was designed under Mr. Hunter's personal supervision.

All of the brick making machinery is located on this ground floor of the plant, resting on a foundation of concrete flooring from eighteen inches to six feet in thickness. All of the machinery is the latest of its kind which has been produced, and was obtained from the American Clay Machinery Co. of Bucyrus and Willoughby, Ohio, the largest manufacturers of brick making machinery in the world.

Lined up on one side are three huge mixing machines, massive structures which churn the sand and lime together much after the manner of kneading bread. Directly across an aisle, left vacant to permit the passage of hand cars on tracks, are located the brick pressing machines, two with a capacity of 20,000 bricks each in ten hours, and a third for high-grade facing brick, which has a capacity of 14,000 bricks in a similar period.

As fast as the mixture is completed it is transferred directly into the presses, and the bricks are turned out in a continuous stream to be loaded on the small cars standing on the tracks, at arm's length away. When the cars are filled they are propelled away on the tracks directly into massive hardening cylinders, where the final or "cooking" process takes place. Two of these cylinders have been installed, each with a capacity of 20,000 bricks. They are each 72 feet long and 6 feet in diameter, weighing thirty tons each. They are equipped with rails, so that the cars when rolled in can remain in the cylinders while the bricks are hardened. This so-called "cooking" process is caused by filling the cylinders with live steam after sealing the opening and allowing the process to continue for ten hours. Some idea of the pressure brought to bear on these cylinders during this process may be secured from the fact that these massive pieces of work expand some three inches every time a batch of brick is hardening.

These cylinders are sealed at the close of work each night and at 4 o'clock the following morning the watchman blows off the steam, so that the cylinders can cool in time for the workmen to unload them when they arrive in the morning. This is simply done by pushing the cars out, and either taking them up-stairs on the elevator and directly into waiting freight cars, or transferring them out of doors to be piled in the yard to await wagon or automobile shipment.

The power plant of the factory is thoroughly modern and of sufficient capacity to provide for future growth. The boiler room, made of sand-lime brick, is as near fireproof as is possible to make it, and as an additional precaution it is separated from the main factory building by a fire-wall of sufficient thickness to stand in any emergency. The equipment in the boiler room consists of two 150-horse power Stewart boilers. Apparently the company has faith in its product for fire brick purposes for both of the huge boilers are walled and lined with sand-lime brick. In this room is also located a water gauge which connects with a water reservoir on the roof of the building and which registers to a gallon the amount of water on hand. This reservoir is fed from the company's brook, which passes close to the boiler room, by means of a modern power pump.

Adjoining the boiler room is the engine room, cut off by another fire-wall, faced with the highest grade brick produced under the sand-lime process. This room is encased in hard pine, finished in the natural wood. One of the latest type Fitchburg engines of 175-horse power has been installed and tested. Here is also located the pumping plant of the factory, consisting of two Blake pumps, each of sufficient daily capacity to serve the wants of a sand-lime brick factory half again the size of the present one. It is intended to have one of these pumps in reserve at all times, so that if one breaks down the other will be ready for business at an instant's notice.

The gauges and recording devices of the hardening cylinders are set up here, the delicate mechanism showing the night engineer at a glance the amount of steam and pressure in each cylinder, and at the same time tracing a complete hourly record for the ten hours, which can be removed and read the following day.

The transmission of the plant is considered ideal. The main drive consists of a 79-foot belt running from the engine fly wheel to the second floor of the main building, where it connects with the shafting of the brick making machinery of the floor beneath.

According to the present plans of the company the plant will be started at practically its full capacity. Already it claims to have many sizable orders on its book, all of which came unsolicited and asking for early delivery of brick. The admirable location of the plant, the officials point out, will enable the firm to ship at a minimum cost to other towns and cities, and compete there with local brick making concerns. If necessary three shipments in carload lots can be made daily from the factory over the Webster branch of the Boston & Albany Railroad.

For local delivery it is proposed to use heavy automobile trucks, which will enable the company to unload bricks in Worcester for $1 per thousand against a delivery charge of $1.90 to $2.25 which it costs for brick delivered on the cars in this city.

The company is also looking forward to the time when the electric freight will be an accepted fact in and about Worcester. This will open another excellent transportation facility for the Worcester & Southbridge branch of the Consolidated system on the easterly boundary of the property, and affords all kinds of opportunities for side track facilities.

The annual convention of the National Association of Cement Users bids fair this year to score one of the greatest hits in its history, in connection with the Cement Show at Pittsburgh. The best known men in the industry will deliver papers and participate in the discussions. President Humphrey has been untiring in his efforts to bring about a great convention, and those who attend the sessions are assured of a profitable time.

QUARRIES

PITTSBURGH QUARRIES

Pittsburgh, Pa., Nov. 20, 1912.—This has been a splendid year for stone companies, especially those which made a specialty of road stone. More state and county road work has been done than for a long time. The new department of state road building under the management of Supt. E. M. Bigelow, has been putting in some big requisitions for crushed stone, especially in western Pennsylvania. Allegheny county projects have taken a considerable amount. Bridge stone has not been such a good seller, owing to the fact that so much concrete has been substituted in the making of ordinary bridges and sluice ways. This concrete business, however, has given some of the stone men a good many orders for ground stone.

The situation this fall is fairly favorable to a good trade throughout the winter and many of the plants will continue to run as long as the weather permits. Quite a number of new operations have been opened up this year in western Pennsylvania, showing that the stone business is drawing new capital into it all the time.

The Cascade Lime Company, of Pittsburgh, has been incorporated under Delaware laws, with a capital of $5,000 by F. C. Pearson of Pittsburgh; B. Wadkins and Lawrence J. S. Topper of Williamsport, Pa.

The Pittsburgh Limestone Company, which operates extensive quarries in Bradys Bend township, Armstrong county, Pa., has had plans prepared for improvements which will cost $100,000, to include several new buildings and a large amount of machinery. The company now has a large daily tonnage which will be nearly doubled when its machinery is installed.

The Cold Springs Lime & Stone Company has been organized at Springfield, Ohio., with a capital of $50,000, by Robert Mills of that city as president and A. G. Stineman of Cincinnati, as vice-president. The company has taken over the Strunk-Meyers Lime Company's property.

The National Mortar & Supply Company, which has offices in the Second National Bank building of this city, has started work on an addition to its lime kiln plant at Gibsonburg, Ohio. Fifteen new kilns will be built, together with a kiln house and power building. This will give it a capacity of 350 tons daily.

The United Lime & Stone Company, of West Fairview, Pa., will shortly put its plant in operation. It has been idle for a year. The company will mine and manufacture phosphate and cement. L. W. Spong is president.

The Rock Point Limestone Company has been organized at New Castle, Pa., by E. J. House, Dwight Thompson, Harry M. Wirsing and others of that place to mine limestone, stone and clay in Lawrence county, Pa.

The Capital Stone & Lime Company, of Harrisburg, Pa., whose capital is $5,000, has received a charter good for a thousand years.

The Venango Mining Company has been organized at Franklin, Pa., by Charles L. McGavern, Fred Philips and William J. McGavern of that place, to mine sand and stone in Venango county, Pa.

The Pittsburgh Quarry Company will shortly start operations in the north part of Berkley county, W. Va.

The Western Maryland Railroad Company is getting its extension in that part of the country in shape and this company, in which Pittsburgh people are largely interested, will concentrate 21 quarries with headquarters at Martinsburg, W. Va.

All the quarries at Lorain, Ohio, are now working on the nine-hour schedule. They have a large number of orders yet to fill and will keep running as long as the weather permits. The Ohio sawmills there are working 13 hours a day and are away behind with shipments.

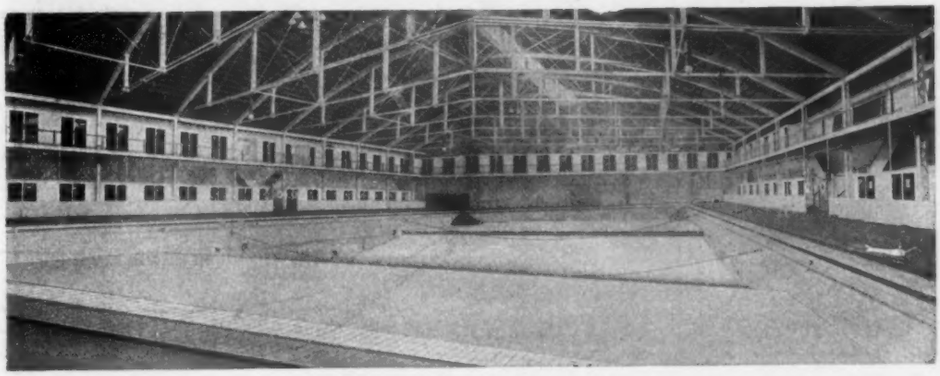
The plant of the Duck Run Lime Company at Newton, Lawrence county, Pa., has started up. Captain M. S. Marquis of New Castle, Pa., is one of the heaviest stock-holders. The plant is operated by electricity and the stone will be ground into powder and shipped over the Harmony & New Castle trolley line.

MILWAUKEE QUARRIES

Milwaukee, Wis., Nov. 19.—It is reported that city hall officials of Madison, Wis., the capital city of the state, have expressed the opinion that Madison is losing money each year on its city stone quarry because the stone which is obtained from it is said to be practically worthless for use on the surface of the streets.

It is claimed that while the Madison quarry runs about even on its expenses each year, losing a little one year and gaining enough the next to make up the deficit, the city in the long run is losing money, both because of the depreciation of value of the quarry and because of the fact that a large sum has to be expended each year for the repair of streets which have been surfaced with stone from the quarry. It is the opinion of several Madison officials that the city would be saved a large sum each year by abandoning the quarry, or selling it and purchasing the stone for the streets from outside concerns.

It is said that the quality of stone taken from the quarry is low, that it is soft and will not stand up under the test for any length of time under the pressure to which it is subjected on the surface of streets, even when used with a tar or asphalt binder.



WHERE MEDUSA WAS USED.

Owing to the extreme fineness it may easily be perfectly mixed with cement in the necessary proportions.

Medusa waterproofing does not affect the color, strength, setting or hardening qualities of concrete, and when used in proper proportions it will make any concrete work impervious to water and prevent discoloration from rain. It also prevents the white efflorescence which so often renders cement work unsightly, and prevents the appearance of hair cracks on the surface.

Medusa waterproofing is specified by the most eminent architects and engineers in the United States and Europe, and is rapidly displacing the old-time paints and coatings formerly used to prevent the penetration of water into concrete.

It will be found to be especially useful in making building blocks, cement plaster, roofing tile, cellar walls, cistern and reservoir linings, conduits, sewer pipe, elevator pits, and in a multitude of other uses in which resistance to percolation of water is required.

One hundred thousand pounds are now being used in the New York Dock Company's job, Atlantic basin, Brooklyn, while the United States Government has used Medusa in work at Puget Sound navy yard, Fort Monroe, Va., and other points.

Samples and free illustrated booklets describing some of the wonderful results obtained with Medusa will be sent to those interested.

Gray and white waterproofed Portland cements are also manufactured by the Sandusky Portland Cement Company and consist of Medusa waterproofing ground with Portland cement in the process of manufacture, and is a most valuable addition to the list of high-class building materials. This company is the exclusive manufacturer of both cement and waterproofing, and as the demand for this new product has far exceeded expectations, it has been found necessary to install extra grinding machinery and packing apparatus to enable them to fill orders promptly.

DRUMMOND END-FLIGHT.

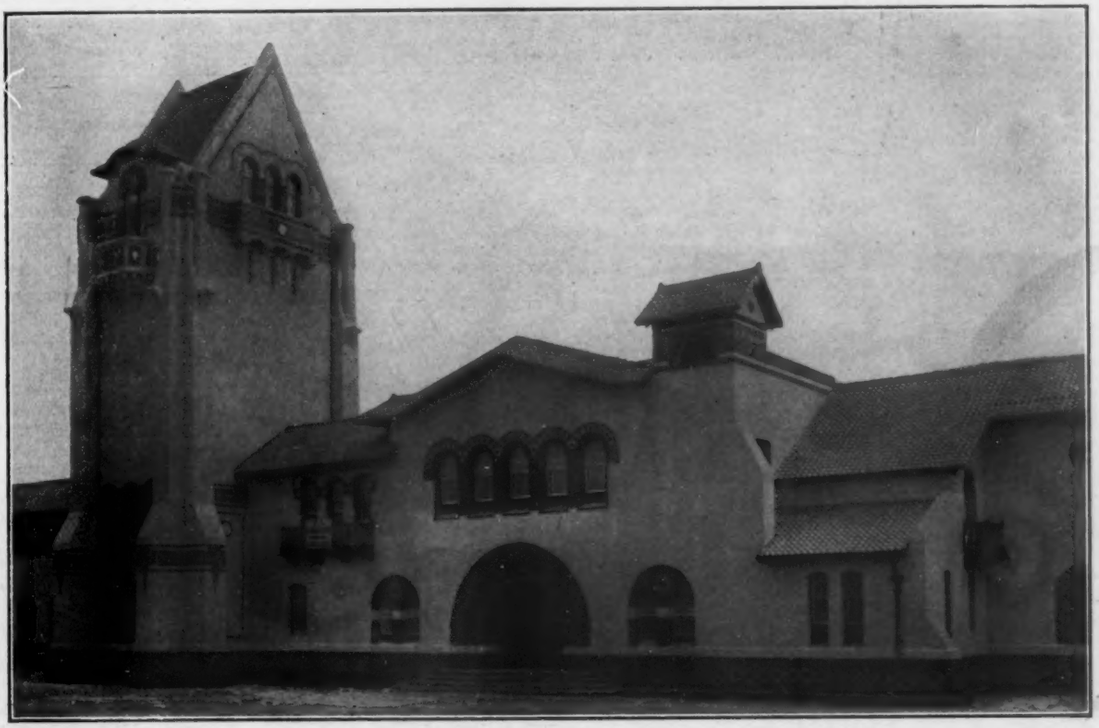
We have received a little leaflet from the Link-Belt Company, Chicago, describing the Drummond End-Flight for screw conveyor. This is a new device for prolonging the efficiency of screw conveyors in the handling of gritty materials. It is not an experiment in any way, as it has been in use for the past three or four years in the mills of the Chicago Portland Cement Company. It is the invention of the late vice-president of this concern, D. D. Drummond. The Drummond End-Flight eliminates the very troublesome and tedious job of removing gudgeons and flight sections for repairs, which consume a considerable amount of time, when the gudgeon becomes stuck, and the loss of output at the mill while this repair is being made is sufficient to warrant a considerable investment to overcome the difficulty. However, this device sells at a very reasonable figure. The Link-Belt Company is the sole manufacturer. A copy of the circular describing it, bulletin No. 154, can be had by addressing the company.—Advertisement.

EDGAR ALLEN COMPANY'S BOOKS.

We have received copies of two catalogs from the Edgar Allen American Manganese Steel Company that are of interest to the trade. One is describing the Electric Special Ground Gears and Pinions, while the other describes the "Komata" liner for tube mills. Copies of these booklets may be had by addressing the company at its general office in Chicago.—Advertisement.

ADAMANTINE STEEL.

There is a certain kind of steel that has won a great place in the market on account of its high excellence. It is the "Adamantine" which the Chrome Steel Works, Chrome, N. J., makes up into jaw plates for Blake crushers. We have at hand a neat little book published by the company, describing this jaw plate. It consists of a combination of forged and rolled Adamantine Chrome steel bars set side by side, cast welded, and also mechanically interlocked into a backing of tough open hearth cast steel. The wearing face of the plate is afterwards tempered to extreme hardness. This point is an important one to users of crushers, as it is generally the case that more trouble comes from the jaw plate than from any other source in a crusher. If it is true in most cases, it is especially true in the matter of crushers that the best is always none too good. The forging and rolling of the Adamantine Chrome steel bars give them a fibrous structure not obtained in any cast steel and adds greatly to the tensity and toughness of the metal, and, furthermore, permits of the proper tempering of the wearing face of the plate. The tough open hearth steel used for the backing will refuse temper and will, therefore, prevent any possibility of a plate breaking or cracking in service. The company has been enabled by this method to produce a plate combining in the highest degree the elements of extreme hardness on the wearing face and also great toughness just where this is especially desirable. Although this plate was introduced only four years ago, it is now in very general use. The company is equipped to supply plates with either flat or corrugated wearing face for all the different sizes and makes of Blake type crushers. Every person interested should have a copy of the little booklet describing these plates, as it will be to his advantage to have this information before arranging for next year's equipment.—Advertisement.



CALIFORNIA STATE NORMAL SCHOOL.

PANAMA CANAL WILL HELP BUSINESS.

That the opening and operating of the Panama Canal will be a most important factor in the development of business in the South and Southwest was the keynote of a number of addresses made by prominent bankers and business men from various parts of the country who in the last month held a conference in New York with especial reference to mortgage banking. The enormous crops of corn, wheat and cotton that have been harvested will, in the opinion of these representative men, increase real estate values, while they believe that the opening of the canal export trade through Southern ports will increase to an enormous extent and that a new era in our industries will follow. The railroads running north and south will be immensely benefited, while the railroads running east and west likewise will be helped by the transfer of traffic from their lines to lines having an entrance on the Gulf of Mexico. At the conference named there were present bankers and business men from every state in the Union.

ILLINOIS LIEN LAW.

(Continued from page 22.)

constitutional, and there are more of them that will be, but plenty is left to secure the thoughtful. Some of these decisions are due to the fact that they were not properly argued before the court.

This act went too far, attempted too much, was too one-sided. When a law provides that an attorney's fee shall be taxed in favor of one party to a suit if he wins, but not in favor of the other party, if he wins, it is not only contrary to the Fourteenth Amendment of the Constitution of the United States, that wisely guarantees equality before the law to every citizen, but it rouses against it the sense of fair play in the mind of every man.

This revulsion of sentiment reached the courts themselves, and created a prejudice against the law, many of whose provisions are wise and just and sure to stand, and provoked decisions that have opened wide doors to fraud and perjury to escape statutory liability.

While frequent changes in a law create confusion and worry with the need of new interpretations, it is possible to draft a law that would disarm criticism by community and courts; recognize the rights of the people at large; and give enough to make assured safety to the large interests involved.

No law should be enacted that does not give "the other fellow" a fair show for his "white ally"; that does not appeal to the common sense and sense of fair play that universally prevails.

I stand for and believe in giving the great building industry that protective security by the law that will make it safe.

It employs as many men in this state as any other non-corporate industry in it. It is to the interest of all to make their business safe.

But few on first thought, even those engaged in it, appreciate what the building industry is, what it has been in history, its magnitude, its character.

No work of man more clearly marks his place in civilization's ranks than his buildings for pious, public and private use.

The crude hut of the savage, the cave of the cliff dweller, tell as truly of a benighted race as do sumptuous palaces of a race in the lead of human progress. As you travel on trains, you judge the character of communities by the houses you see.

The splendid ruins of ancient Athens as plainly tell of commercial prosperity as history of their military prowess, or Homer or Demosthenes of intellectual supremacy.

The Coliseum's ruins, the remains of her historic temples, are as strong confirmation of Rome's bygone leadership, as Virgil or Cicero of a like literary rank.

There, brain and muscle joined, and architect, artisan and laborer view to leave to generations yet to come the story of their people's place, chiseled in marble columns and mighty walls.

Tourists from this new world, traveling the old, seek as much her Taj Majals, her finished temples, her splendid palaces, her mighty bridges, her ancient and modern witnesses of the builder's work, as they do the Waterloos where war has told the bloody story of a nation's destiny or the Avons, where the Shakespeares, the masters of letters, have made their homes immortal.

Tourists from the old world to this, where cities spring like magic, find our buildings voice thrift, solidity, energy and advancement. They leave this city, the marvel of the world, to return home and tell their neighbors, not of our chief justice, our millionaires, our statesmen, but of our skyscrapers, from whose tall tops Chicago builders have trumpeted Chicago world-wide fame.

Not muscle alone reared these monuments, past and present, of man's achievement, but as much of skill and thought entered into their construction as ever directed the painter's brush, or the philosopher's pen. These necessities of life and business not only contribute to comfort, appeal to pride, but tell of man's devotion to the God he worships, the land he loves with a patriot's fervor, the home he holds as the holiest of holies and to which he gives a life of labor and love.

The divers branches of this great industry enter into every day's activity, employs millions and millions of capital, are contributed to by and sustain countless industries and are followed by thousands from those who fell the forest tree or dig the earth for earth and soil, to where the mill and saw, the hammer, forge and furnace turn into use the ornament the finished wood, metal or clay, and more than half of every brick, every barrel of lime, every foot of lumber, every pound of metal, stands for the crystallized sweat of labor.

It is the settled policy of every civilized people today to protect them by mechanic lien laws, not that they may make more, but save and secure what they have made.

Oh, Chicago Association of Credit Men, missionaries of a commercial honor, high and holy, men whose life work is to make the word of seller and buyer as good as gold, promise and payment synonymous terms, join me in the hope that the great state of Illinois may lead our land in making laws for mechanics and merchants so clear and plain, so certain of quick and economical enforcement, that the dishonest will not dare defy them—laws that will back you as Builders of Conscience and Commerce.

MANGANESE STEEL FOR ECONOMY.

The Edgar Allen American Manganese Steel Company, of Chicago, Ill., and New Castle, Del., presents the accompanying illustration as evidence of the remarkable endurance of "Stag" Brand Manganese Steel.

This pinion, together with others of the same make, was used for driving conveying machinery, and was in continual operation for over 25½ months, while the average service given by cut steel pinions under exactly the same conditions was only three weeks.

That the metal is wonderfully tough is unmistakable. Note that even though worn down very thin the teeth did not break.

While it is not good practice to wear out a pinion to the extent shown, this is an example which is characteristic of the wonderful economy which results from using good manganese steel.

PINION MADE OF "STAG" BRAND MANGANESE STEEL.

The makers of "Stag" Brand Manganese Steel are turning out and selling many hundred tons of castings per month in the form of gears, pinions and other heavy service equipment, which fact demonstrates the extensive approval and adoption of this metal.—Advertisement.

Hattiesburg Sand & Gravel Company, Hattiesburg, Miss., organized by D. J. Sutherland and Louis L. Davidson; will develop gravel and sand deposits.

As ROCK PRODUCTS goes to press preparations are well in hand for the first annual Pittsburgh Cement Show. The indications are that it will be a tremendous success, as are all the other events under the auspices of the Cement Products Exhibition Company. The number of exhibitors will be all that can be desired, and there will be special features that have not been seen at any other show, especially along educational lines.

Every retailer who has had trouble with the bag proposition in his cement trade will be interested in the enterprise that is being conducted by one of the large companies in the shipment of cement in bulk. Retailers who can handle cement delivered in this way, who have bins for its storage so that it will be safe from being subjected to dampness, will greet the new way with enthusiasm. The greatest loss that the retailer suffers comes from the careless handling of bags, and if this loss can be eliminated it will be something worth while.

CLASSIFIED ADVERTISEMENTS

Advertisements will be inserted in this section at the following rates:

For one insertion.....25 cents a line
For two insertions.....45 cents a line
For three insertions.....60 cents a line

Eight words of ordinary length make one line.
Heading counts as two lines.
No display except the headings can be admitted.

Remittances should accompany the order. No extra charges for copy of paper containing the advertisement.

EMPLOYEES WANTED

Cooper Wanted—Steady work guaranteed. If interested address Michigan Lime Co., Petoskey, Mich.

EMPLOYMENT WANTED

SUPERINTENDENT AND MANAGER.

An experienced and thoroughly competent man, who can show best possible results, wants position as superintendent of limestone quarry. At present with one of the largest cement manufacturing concerns in the East in the above capacity. Twenty-nine years old, married and strictly sober. Best references. Personal interview. Location immaterial. "Limestone," care ROCK PRODUCTS.

Young man with family, strictly sober, desires position as manager of glass sand or crushed limestone proposition. Is now employed in this capacity. Address 910, care ROCK PRODUCTS.

WANTED.

Position as superintendent of quarrying and crusher plant. Fifteen years' experience in millwrighting and machinist, mining and quarrying. Have very successfully maintained and operated plants. Can handle labor.
Address 915, care ROCK PRODUCTS.

Experienced quarry operator wishes to make a change; would like to contract a crushing plant in South or West; can give bank references; prefer not to work on salary. State full details of plant, stripping, etc., in first letter.
Address 914, care ROCK PRODUCTS.

General manager of large stone crusher plant working on cement rock and railroad ballast contract desires similar position near a good school for his children. Four years in present position. Address
J. C. K., care of ROCK PRODUCTS.

MACHINERY FOR SALE

FOR SALE

Steam Shovels, Locomotives, Cranes, Rails, Cars, Cableways, Air Compressors, Stone Crushers, Etc.
First-Class Released Material at the Right Prices.
WM. B. GRIMSHAW CO.
688 Drexel Bldg. Philadelphia, Pa.

(Continued next page.)

FOR SALE OR HIRE.

Crushed stone plant located in the thriving city of Columbia, S. C. Capacity about 400 tons per day. Good opportunity. Address
CAROLINA CRUSHED STONE CO., Charleston, S. C.

For Sale—Complete quarry equipment located at Valley City, Ill., No. 5 and No. 3 Austin crushers, drop bottom type; 80 horse power engine and 80 horse power boiler; six steel end dump cars; elevator, screen, hoist, track, tools, etc. Will sell as whole or separately. All in excellent condition. Address
J. W. Walton, Jacksonville, Ill.

MACHINERY WANTED

WANTED.

Locomotive crane or traveling derrick, 35 to 50 foot boom. Must be in good condition.
YORK SAND & GRAVEL, LTD, East Toronto, Ont.

Wanted—Small second-hand stone crusher for breaking large egg coal and stone. Give full particulars, size of engine needed to run it and capacity. Send cut of crusher. Address C. A. Appley, Libertyville, Ill.

CABLE EXCAVATOR AND AERIAL TRAMWAY WANTED.

Cable excavator using orange peel bucket, having 500 to 900 ft. span, complete or without power plant; must be in good condition; send details.
Also 1,200-foot aerial tramway with capacity for handling a maximum of twenty-five cubic yards per hour, gravity haul, no power required. Address
Mart Products Co., Barton, Vermont.

Wanted to Purchase—No. 10 Austin, Gates or McCully crusher with elevator and screens. Must be in first class condition and cheap. Western Crushed Rock & Concrete Company, Kansas City, Mo.

Tract of 123 acres containing bank of finest grade Concrete Gravel 15 feet deep, with railroad siding into pit and established business. Personal inspection requested. For particulars apply W. E. YOUNG, Anglesea, N. J.

BUSINESS OPPORTUNITIES

EXCLUSIVE CONTROL GIVEN.

Under our confidential trade note formulas and processes for the manufacture of concrete marble, decorative concrete, marble lumber, composition flooring, etc., by city, county or state licenses or by shop right license. No machinery required. Little capital, practically as yet. No competition. A profitable business proposition. For particulars address Art Stone Co., Box C, Waynesboro, Pa.

STONE LAND.

For Sale—Several tracts of high grade limestone. Splendid location on water and railroad, suitable for flux, lime, cement, or for investment as prices are right. Herman Besser, Alpena, Michigan.

Located on Lines of Southern Railroad, Switches to Works, Broken Stone Proposition, with heavy Engines, Crushers and other necessary Machinery. Property near principal Cities of State, State Building Lots, Macadam Roads, will sell at bargain.
Address Arline F. Messick, Winston-Salem, N. C.

For Sale—Local Rights to make best concrete waterproofing compound on the market.
A. CHAPPLE, P. O. Box 517, Tuscaloosa, Ala.

Typewriter for Sale—Standard machine; perfect condition. A big bargain. W. A. Ehlers, Carthage, Mo.

BOOKS FOR THE TRADE

Cement Users

The Uses of Hydraulic Cement
Frank Harvey Eno. Price $1.00

Portland Cement for Users
Henry Faija and D. B. Butler. Price $1.20

Cements, Mortars and Concrete
Myron C. Falk. Price $2.50

Reinforced Concrete
W. H. Gibson and W. L. Webb. Price $1.00

Concrete System
F B. Gilbreth. Price $5.00

Hand Book of Cost, Data
Halbert P. Gillette. Price $4.00

Concrete Construction
H. P. Gillette and C. S. Hill. Price $5.00

Cement Workers' and Plasterers' Ready Reference
H. G. Richey. Price $1.50

Notes on Testing and Use of Hydraulic Cement
Fred P. Spalding. Price $2.00

Reinforced Concrete
A. W. Buel and C. S. Hill. Price $5.00

Concrete
Edward Godfrey. Price $2.50.

Reinforced Concrete
C. F. Marsh and Wm. Dunn. Price $7.00.

Practical Treatise on Foundations
W. Patton. Price $5.00.

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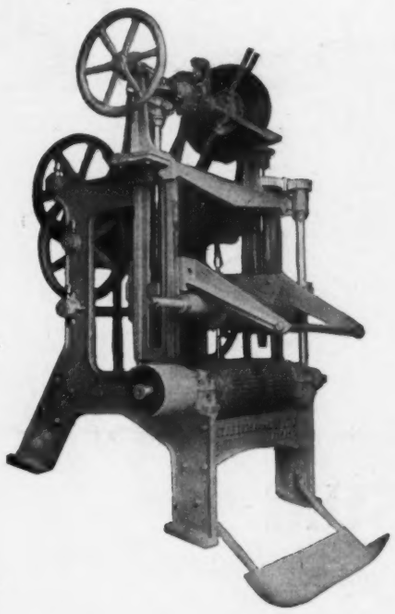
OCTOBER 22, 1912



Points of Interest Concerning

The Ehrsam Wood Fibre Machine

The log feeds itself to the saw. As the log decreases in diameter the Speed of the log and of the feed INCREASES AUTOMATICALLY.
In other words, the Peripheral Speed remains constant.
The feed of the log to the saw is in direct proportion to the speed of the log.
This automatic uniformity of feed INSURES UNIFORMITY of FINENESS in the PRODUCT.
No frictional devices are used, none being necessary.
All the working parts are planed. All of the gears are cut from solid steel.
All of the parts are interchangeable and numbered, so that duplicate parts can be quickly obtained and easily put in position.
The Saw mandril is extra heavy and made of the best crucible steel.
The journals are chain oiling. No Machine can be more substantially built. Write for full information.

Okeene, Okla., June 14, 1911.

J. B. Ehrsam & Sons, Enterprise, Kans.

Gentlemen:—Some time ago I received a letter from you asking how the wood fibre machine you shipped us is doing. Will say it is the best I ever used. In regard to any suggestions I could make as to how it might be improved, will say that I can make none, as it is O. K. Yours truly, SOUTHWEST CEMENT PLASTER CO.,

Frank Dodge, Sup't.

Manufacturers of Jaw and Rotary Crushers for Gypsum, Vibrating Screens, Hair Pickers, Wood Fibre Machines, Calcining Kettles, Plaster Mixers, Power Transmission

The Enterprise Vertical Burr Mill

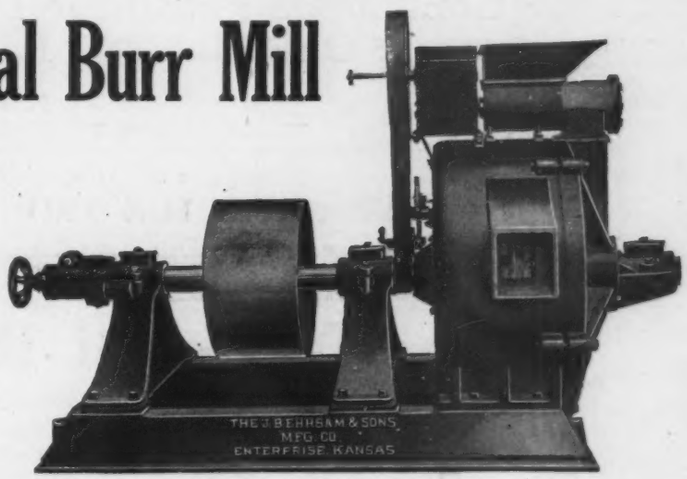
is especially designed for grinding gypsum, limestone, coal, coke, paint, rock, foundry facing, carbon, salt, and other similar substances.

It is STRONG and DURABLY built.

Has INTERCHANGEABLE STONES, which can be easily removed for dressing and replaced.

Is provided with our POSITIVE CONTROLLABLE FEEDER, which feeds an absolutely uniform stream into the mill at the required capacity.

MANY OTHER ADVANTAGES.



The J. B. Ehrsam & Sons Mfg. Co.

Designers and Builders of

Complete Equipment for Plaster Mills

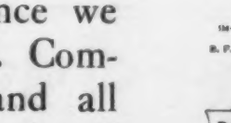
ENTERPRISE, KANSAS, U. S. A.

A Message From Down East

THERE are a great many good dealers in this country who, for mighty good business reasons, will not be satisfied with anything short of the best. This means the best materials, the best in service and the most effective dealer co-operation in promoting sales. Of course, it always pays to be progressive.

In this space last month we showed you a letter from A. L. Bartlett Co., also their new motor truck "Delivering the Right Goods" at Rockford, Ill. And you remember they said this:

"After years of experience we say emphatically — **U. S. G.** Company's products first, last and all the time. We have tried nearly all the others." And here's what one of the many "satisfied" dealers down East thinks of the Progressive Line:



B. F. MARSH, President — Established 1868, Incorporated 1911 — R. H. WHITNEY, Vice-Pres. and Treas.

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22 GARDEN STREET WORCESTER, MASS.

June 25, 1912.

United States Gypsum Company,
Chicago, Ill.

Gentlemen:-

Notice your ad on the back cover of the June Dealers' Record. Tell Bartlett he is right. We do not feel that we can afford to handle any other than United States Gypsum Co's products.

We have also tried them all.

Very truly yours,
B. F. MARSH COMPANY
R. H. Whitney
Treasurer.

RHW/A

We also stated in this space last month and again repeat that many other good dealers in all parts of the country are saying the same thing.

The proof is quite positive that the progress of the **U.S.G.** Line is the progress of the Gypsum Industry. Every day accentuates this fact.

SACKETT Plaster Board
GYPSINITE Fireproof Studs
PYROBAR Gypsum Tile
U. S. G. Cement Plasters
U. S. G. Wood Fibre Plasters
U. S. G. Prepared Plasters
U. S. G. Finishing Plasters
ADAMANT Plasters (Interior and Exterior)
U. S. G. Bond (Concrete) Plaster
U. S. G. Caen Stone Cement
CEMENTICO Decorative Wall Finish, Etc.